OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 22, 2003

Doug Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 923-1000.002.R272
Laboratory Reference No. 0310-027

Dear Doug:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2003.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Golder Associates Inc.

18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Telephone (425) 883-0777
Fax (425) 882-5498
www.golder.com

January 8, 2004

Our ref: 923-1000.R272

Palmer Coking Coal Company
31407 Highway 169
P.O. Box 10
Black Diamond, Washington 98010

ATTENTION: Mr. Bill Kombol

RE: LANDSBURG MINE SITE INTERIM GROUNDWATER MONITORING RESULTS– OCTOBER, 2003

Dear Mr. Kombol:

Golder Associates Inc. (Golder) completed an interim groundwater monitoring event at the Landsburg Mine Site during October, 2003. Groundwater samples were collected from monitoring wells LMW-2, LMW-4, LMW-3, LMW-5, LMW-6 and LMW-7 (see Figure 1). Monitoring wells LMW-2 and LMW-4 are completed to monitor shallow and deeper zones within the Rogers seam north of the subsidence trench, and LMW-3 and LMW-5 are completed to monitor shallow and deeper zones within the Rogers coal seam south of the subsidence trench. These wells lay along the primary pathways for detection of a chemical release from the mine, were one to occur. Samples were also collected of the groundwater emanating from Rogers Portal #3 area, located south of wells LMW-3 and LMW-5.

Groundwater sampling was conducted in accordance with the *Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site* (Golder, 1997), and included the following activities:

- Measurement of static water levels at monitoring wells,
- Well purging to insure sample representativeness with the currently installed dedicated pumping systems,
- Measurement of field parameters pH, specific conductance, temperature, dissolved oxygen, and turbidity,
- Collection of all purge water in appropriate containers for temporary on-site storage prior to disposal, and
- Collection of representative samples in appropriate containers; metals samples were field filtered using an inline 0.45 μm filter.

Sampling activities were documented on Sample Integrity Data Sheets (SIDS). Copies of the completed SIDS are provided in Appendix A to this letter.

The monitoring well scheduled to be installed in Portal #3 area was not installed as of the October, 2003 sampling; therefore, samples were collected from a small sump dug in which a drive tube was inserted into the Portal #3 seep area. In this manner, the seep water was collected just prior to surfacing and contacting the atmosphere. Samples were split with the City of Kent who conducted separate analyses on the Portal #3 seep sample. The analytical results on the split sample have not yet been provided by the City of Kent.

Following sample collection, all bottles were sealed, labeled and placed in a cooler maintained at approximately 4° C. Groundwater samples from monitoring wells were transported under chain of custody procedures to STL Analytical Laboratory for analyses, located in Seattle, Washington, whereas the Portal Seep water sample was taken to On-Site Analytical Laboratory for analyses, located in Redmond, Washington. Analysis on all water samples included full GC/MS analysis (volatiles by EPA Method 8260, semivolatiles by EPA Method 8270, and pesticides/PCBs by EPA Method 8081), priority metals, fuel hydrocarbon scan, and selected general wet chemistry parameters.

The attached Tables 1A through 1E present analytical results for all analyses. Laboratory analytical reports are provided in Appendix B. Table 2 presents only those analytes that were detected in at least one of the samples. Table 2 also provides a comparison of detected concentrations to regulatory screening levels. Screening levels are based on maximum contaminant levels (MCLs) or State of Washington MTCA Method B groundwater cleanup levels whichever value is less. In cases where an established MCL or Method B Cleanup Level does not exist, a similar (surrogate) compound regulatory screening level is identified for comparison.

The analytical results indicate no significant changes in groundwater conditions from those observed during the remedial investigation (RI). There were no volatile organic, pesticides, PCBs or fuel hydrocarbons detected in any of the samples. One semi-volatile organic compound (2-methylnaphthalene) was detected in the Portal #3 seep water sample at 0.13 ug/L (reporting limit was at 0.09 ug/L). This compound does not have a Federal MCL or State of Washington MTCA Method A or B groundwater cleanup level. A possible surrogate compound may be naphthalene, which has a MTCA Method B groundwater cleanup of 160 ug/L (Ecology 2001)[2]. This cleanup level is over 1000times the detected concentration of 2- methylnaphthalene at the site. No semi-volatile organic compounds were detected in any of the groundwater samples from monitoring wells.

Total dissolved solids (TDS), iron and manganese are the only compounds that were detected at concentrations in excess of the screening levels. For these compounds the only screening levels are secondary maximum contaminant levels (SMCLs) which are not health-based standards, but are protective of aesthetic qualities of water only. The concentrations of TDS, iron and manganese detected during the October 2003 sampling are similar to concentrations detected during the RI (Golder, 1996)[1] and the first Interim Groundwater Sampling event in May, 2000.

[1] Golder Associates Inc., 1996. *Remedial Investigation and Feasibility Study for the Landsburg Mine Site.* Landsburg PLP Steering Committee.

[2] Ecology, Washington State Department of, 2001. *Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulations.* Publication No. 94-145. Olympia, Washington.

If you have any questions or require any additional information, please contact Douglas Morell at (425) 883-0777.

Sincerely,

GOLDER ASSOCIATES INC.

Thomas M. Stapp
Environmental Chemist

Douglas J. Morell, Ph.D.; L.Hy.
Principal

TMS/DJM/kkm

010804tms1

TABLES

TABLE 1A

OCTOBER 2003 GROUNDWATER
SUMMARY ANALYTICAL RESULTS

Landsburg Mine Site Interim Groundwater Monitoring Groundwater Quality Data														LMW-5 DUPLICATE			
Well No:		LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3	
Sampling Date:		Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003	
Parameter	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q
Field Parameters																	
GW Elevation, ft	feet amsl	606.02		639.83		605.45		639.55		576.82		536.38		639.55		na	
pH[a]	units	5.66		8.70		5.45		7.24		7.71		6.46		7.24		7.1[b]	
Temperature	°C	10.9		11.3		10.8		10.9		9.9		11.7		10.9		-	
Dissolved Oxygen	mg/L	0.32		0.41		0.4		0.46		0.33		0.43		0.46		-	
Sp. Conductance	mS/cm	0.119		0.046		0.081		0.127		0.091		0.162		0.127		0.75[b]	
Turbidity	NTU	0.82		0.55		1.62		1.3		25.9		1.4		1.3		11.4[b]	
General Chemistry																	
Total Alkalinity	mg/L as CaCO3	650		170		640		440		130		380		450		450	
Chloride	mg/l	2.29		1.34		2.1		1.29		0.845		1.27		1.28		1.43	
Cyanide (total)	mg/l	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Fluoride	mg/l	0.06	U	0.036	J	0.06	U	0.06	U	0.085		0.078		0.06	U	0.06	U
Hardness[c]	mg eq. CaCO3/L	630		160		630		430		140		260		420		390[b]	
Nitrate/Nitrite-Nitrogen	ug/l as N	0.61	U	0.61	U	0.61	U	0.61	U	0.61	U	0.61	U	0.61	U	6.1	U
Sulfate	mg/l	0.58		10.1		7.61		3.09		29.2		2.44		3.08		1.78	U
Total Dissolved Solids	mg/l	630		160		650		420		150		370		430		460	

Notes:
a - pH value may be suspect due to instrument drift during field measurements.
b - Laboratory measured value.
c - Calculated value.
U - The analyte was analyzed for but was not detected above the reported sample practical quantitation limit (PQL).
J - Analyte is estimated, below the PQL.

TABLE 1B

OCTOBER 2003 GROUNDWATER
SUMMARY ANALYTICAL RESULTS

Landsburg Mine Site Interim Groundwater Monitoring Groundwater Quality Data												LMW-5 DUPLICATE			
Well No:		LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3	
Sampling Date:		Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003	
Parameter	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q
Inorganics (Dissolved Metals)																	
Aluminum	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Antimony	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.06	U
Arsenic	mg/L	0.001	U	0.001	U	0.001	U	0.00137		0.001	U	0.001	U	0.001	U	0.001	
Barium	mg/L	0.297		0.0742		0.371		0.258		0.108		0.508		0.26		0.28	
Beryllium	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.005	U
Cadmium	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.005	U
Calcium	mg/L	126		38.1		128		89.3		30.8		58.6		87		78	
Chromium	mg/L	0.001	U	0.001	U	0.001	U	0.00157		0.001	U	0.00115		0.00139		0.01	U
Cobalt	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.011	U
Copper	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.011	U
Iron	mg/L	0.477		0.1	U	0.657		0.858		2.3		0.961		0.839		1.5	
Lead	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Magnesium	mg/L	75.9		15.8		75.6		50.2		16		27.8		48.9		48	
Manganese	mg/L	0.245		0.0637		0.214		0.217		0.0337		0.144		0.21		0.2	
Mercury	mg/L	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
Nickel	mg/L	0.00322		0.00159		0.00357		0.00284		0.001	U	0.00218		0.0024		0.04	U
Potassium	mg/L	4.04		1.79		4.15		2.77		1	U	3.71		2.69		2.5	
Selenium	mg/L	0.00147		0.001	U	0.00137		0.00115		0.001	U	0.001	U	0.00133		0.002	U
Silicon	mg/L	10.1		10.9		10.2		10.5		11.6		11.5		10.4		25.9	
Silver	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.01	U
Sodium	mg/L	26.6		10.3		29.7		19.9		8.92		58.6		19.8		19	
Thallium	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Vanadium	mg/L	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.011	U
Zinc	mg/L	0.00323		0.00254		0.00379		0.00329		0.00274		0.00442		0.0031		0.011	U
NOTES:	U - The analyte was analyzed for but was not detected above the reported sample practical quantitation limit (PQL).																

TABLE 1C

Landsburg Mine Site				OCTOBER 2003 GROUNDWATER													
Interim Groundwater Monitoring				SUMMARY ANALYTICAL RESULTS										LMW-5			
Groundwater Quality Data														DUPLICATE			
Well No:		LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3	
Sampling Date:		Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003	
Parameter	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q
Volatile Organics[a]																	
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.0	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.0	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2-Dibromo-3-chloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.0	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
2,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
2-Butanone	ug/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	5.0	U
2-Chloroethyl Vinyl ether	ug/L	b		b		b		b		b		b		b		1.0	U
2-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
2-Hexanone	ug/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.0	U
4-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
4-Methyl-2-pentanone	ug/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.0	U
Acetone	ug/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	5.0	U
Benzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U

TABLE 1C

Bromomethane	ug/L	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	0.20	U
Carbon disulfide	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Carbon tetrachloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Chloroform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Chloromethane	ug/L	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U
cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.0	U
Iodomethane	ug/L	b		b		b		b		b		b		b		1.0	U
Isopropylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
m,p-Xylene	ug/L	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	0.40	U
Methylene chloride	ug/L	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methy t-Butyl Ether	ug/L	b		b		b		b		b		b		b		0.20	U
Naphthalene	ug/L	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
n-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
n-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
o-Xylene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
p-Isopropyltoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
sec-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Toluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U
Vinyl acetate	ug/L	b		b		b		b		b		b		b		1.0	U
Vinyl chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.20	U

U - The analyte was analyzed for but was not detected above the method reporting limit (MRL) or the practical quantitation limit (PQL).
a - Method Reporting Limit (MRL) for all volatile results, except Portal #3 which is a practical quantitation limit (PQL).
b - Not reported by STL-Seattle.

TABLE 1D

Landsburg Mine Site				OCTOBER 2003 GROUNDWATER															
Interim Groundwater Monitoring				SUMMARY ANALYTICAL RESULTS												LMW-5			
Groundwater Quality Data																DUPLICATE			
Well No:		LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3			
Sampling Date:		Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003			
Parameter	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q		
Semivolatile Organics																			
1,2,4-Trichlorobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
1,2-Dichlorobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
1,3-Dichlorobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
1,4-Dichlorobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
1-Methylnaphthalene	ug/L	b		b		b		b		b		b		b		0.099	U		
2,4,5-Trichlorophenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U		
2,4,6-Trichlorophenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U		
2,4-Dichlorophenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	5.0	U		
2,4-Dimethylphenol	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	0.99	U		
2,4-Dinitrophenol	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	25	U		
2,4-Dinitrotoluene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	9.9	U		
2,6-Dinitrotoluene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U		
2-Chloronaphthalene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.99	U		
2-Chlorophenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
2-Methylnaphthalene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.13			
2-Methylphenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
2-Nitroaniline	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U		
2-Nitrophenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	5.0	U		
3 & 4-Methylphenol	ug/L	1.92	U	1.9	U	1.9	U	1.91	U	1.92	U	1.92	U	1.9	U	0.99[a]	U		
3,3´-Dichlorobenzidine	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	4.0	U		
3-Nitroaniline	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	5.0	U		
4,6-Dinitro-2-methylphenol	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	9.9	U		
4-Bromophenyl phenyl ether	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
4-Chloro-3-methylphenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
4-Chloroaniline	ug/L	1.44	U	1.42	U	1.42	U	1.43	U	1.44	U	1.44	U	1.43	U	0.99	U		
4-Chlorophenyl phenyl ether	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U		
4-Methyl phenol	ug/L	b		b		b		b		b		b		b		0.99	U		
4-Nitroaniline	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	5.0	U		
4-Nitrophenol	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	9.9	U		
Acenaphthene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U		
Acenaphthylene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U		
Aniline	ug/L	1.44	U	1.42	U	1.42	U	1.43	U	1.44	U	1.44	U	1.43	U	0.99	U		
Anthracene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U		

TABLE 1D

Benzidine	ug/L	b		b		b		b		b		b		25	U
Benzo (a) anthracene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Benzo (a) pyrene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Benzo (b) fluoranthene	ug/L	b		b		b		0.238	U	b		b		b		0.0099	U
Benzo (ghi) perylene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Benzofluoranthenes	ug/L	0.479	U	0.475	U	0.475	U	0.477	U	0.481	U	0.481	U	0.476	U	0.0099	U
Benzoic Acid	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	25	U
Benzyl alcohol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	5.0	U
Bis(2-chloroethoxy)methane	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Bis(2-chloroethyl)ether	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U
Bis(2-chloroisopropyl)ether	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	9.9	U
Bis(2-ethylhexyl)phthalate	ug/L	7.18	U	7.12	U	7.12	U	7.15	U	7.21	U	7.22	U	7.14	U	5.0	U
Butyl benzyl phthalate	ug/L	1.44	U	1.42	U	1.42	U	1.43	U	1.44	U	1.44	U	1.43	U	2.0	U
Carbazole	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Chrysene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Dibenz (a,h) anthracene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Dibenzofuran	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Diethyl phthalate	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U
Dimethyl phthalate	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	2.0	U
Di-n-butyl phthalate	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Di-n-octyl phthalate	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.0099	U
Fluoranthene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U
Fluorene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U
Hexachlorobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Hexachlorobutadiene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Hexachlorocyclopentadiene	ug/L	4.79	U	4.75	U	4.75	U	4.77	U	4.81	U	4.81	U	4.76	U	9.9	U
Hexachloroethane	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Indeno (1,2,3-cd) pyrene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.0099	U
Isophorone	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Naphthalene	ug/L	0.287	U	0.285	U	0.285	U	0.286	U	0.288	U	0.289	U	0.285	U	0.099	U
Nitrobenzene	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
N-Nitrosodi-n-propylamine	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
N-Nitrosodiphenylamine	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Pentachlorophenol	ug/L	3.11	U	3.09	U	3.09	U	3.1	U	3.13	U	3.13	U	3.09	U	5.0	U
Phenanthrene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U
Phenol	ug/L	0.958	U	0.95	U	0.95	U	0.953	U	0.962	U	0.962	U	0.951	U	0.99	U
Pyrene	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.099	U

U - The analyte was analyzed for but was not detected above the reported sample practical quantitation limit (PQL).
a - 4-Methylphenol isomer reported.
b - Not reported by STL-Seattle.

TABLE 1E

OCTOBER 2003 GROUNDWATER
SUMMARY ANALYTICAL RESULTS

Landsburg Mine Site																			
Interim Groundwater Monitoring																LMW-5			
Groundwater Quality Data																DUPLICATE			
Well No:		LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3			
Sampling Date:		Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003			
Parameter	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q		
Organochlorine Pesticides and PCBs																			
4,4´-DDD	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
4,4´-DDE	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
4,4´-DDT	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Aldrin	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
alpha-BHC	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Aroclor 1016	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
Aroclor 1221	ug/L	0.19	U	0.19	U	0.19	U	0.192	U	0.192	U	0.192	U	0.191	U	0.048	U		
Aroclor 1232	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
Aroclor 1242	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
Aroclor 1248	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
Aroclor 1254	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
Aroclor 1260	ug/L	0.0951	U	0.0948	U	0.0951	U	0.0958	U	0.0961	U	0.0962	U	0.0957	U	0.048	U		
alpha-Chlordane	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	b			
beta-BHC	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Chlordane (tech)	ug/L	0.0951	U	0.0958	U	0.0956	U	0.0952	U	0.0959	U	0.0959	U	0.095	U	0.048	U		
gamma-Chlordane	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	b			
delta-BHC	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Dieldrin	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Endosulfan I	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Endosulfan II	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Endosulfan sulfate	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Endrin	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Endrin aldehyde	ug/L	0.019	U	0.0192	U	0.0191	U	0.019	U	0.0192	U	0.0192	U	0.019	U	0.0048	U		
Endrin ketone	ug/L	b		b		b		b		b		b		b		0.0048	U		
gamma-BHC (Lindane)	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Heptachlor	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Heptachlor epoxide	ug/L	0.00951	U	0.00958	U	0.00956	U	0.00952	U	0.00959	U	0.00959	U	0.0095	U	0.0048	U		
Methoxychlor	ug/L	0.0951	U	0.0958	U	0.0956	U	0.0952	U	0.0959	U	0.0959	U	0.095	U	0.0048	U		
Toxaphene	ug/L	0.951	U	0.958	U	0.956	U	0.952	U	0.959	U	0.959	U	0.95	U	0.05	U		
Hydrocarbon Identification																			
Diesel Range	mg/L	0.239	U	0.237	U	0.237	U	0.238	U	0.239	U	0.239	U	0.239	U	0.630	U		
Gasoline Range	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.250	U		
Lube Oil Range	mg/L	0.477	U	0.474	U	0.474	U	0.477	U	0.477	U	0.478	U	0.477	U	0.630	U		

U - The analyte was analyzed for but was not detected above the reported sample practical quantitation limit (PQL).
b - Not reported by STL-Seattle.

ANALYTES DETECTED DURING THE OCTOBER, 2003 GROUNDWATER MONITORING

Landsburg Mine Site Interim Groundwater Monitoring Groundwater Quality Data															LMW-5 DUPLICATE			
Well No:			LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-9		Portal #3	
Sampling Date:			Oct. 10, 2003		Oct. 9, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 10, 2003		Oct. 13, 2003		Oct. 9, 2003		Oct. 3, 2003	
Parameter	Screening Value	Units	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q	Conc.	Q
General Chemistry																		
Total Alkalinity	NSA	mg/L as CaCO3	650		170		640		440		130		380		450		450	
Chloride	250[b]	mg/l	2.29		1.34		2.1		1.29		0.845		1.27		1.28		1.43	
Fluoride	0.96[aa]	mg/l	0.06	U	0.036	J	0.06	U	0.06	U	0.085		0.078		0.06	U	0.06	U
Hardness	NSA	mg eq. CaCO3/L	630		160		630		430		140		260		420		390	
Sulfate	250[b]	mg/l	0.58		10.1		7.61		3.09		29.2		2.44		3.08		1.78	U
Total Dissolved Solids	500[b]	mg/l	630		160		650		420		150		370		430		460	
Inorganics (Dissolved Metals)																		
Arsenic	0.005[c]	mg/L	0.001	U	0.001	U	0.001	U	0.00137		0.001	U	0.001	U	0.001	U	0.001	
Barium	0.56[aa]	mg/L	0.297		0.0742		0.371		0.258		0.108		0.508		0.26		0.28	
Calcium	NSA	mg/L	126		38.1		128		89.3		30.8		58.6		87		78	
Chromium	0.048[aa]	mg/L	0.001	U	0.001	U	0.001	U	0.00157		0.001	U	0.00115		0.00139		0.01	U
Iron	0.3[b]	mg/L	0.477		0.1	U	0.657		0.858		2.3		0.961		0.839		1.5	
Magnesium	NSA	mg/L	75.9		15.8		75.6		50.2		16		27.8		48.9		48	
Manganese	0.05[b]	mg/L	0.245		0.0637		0.214		0.217		0.0337		0.144		0.21		0.2	
Nickel	0.32[aa]	mg/L	0.00322		0.00159		0.00357		0.00284		0.001	U	0.00218		0.0024		0.04	U
Potassium	NSA	mg/L	4.04		1.79		4.15		2.77		1	U	3.71		2.69		2.5	
Selenium	0.05[a]	mg/L	0.00147		0.001	U	0.00137		0.00115		0.001	U	0.001	U	0.00133		0.002	U
Silicon	NSA	mg/L	10.1		10.9		10.2		10.5		11.6		11.5		10.4		25.9	
Sodium	NSA	mg/L	26.6		10.3		29.7		19.9		8.92		58.6		19.8		19	
Zinc	4.8[aa]	mg/L	0.00323		0.00254		0.00379		0.00329		0.00274		0.00442		0.0031		0.011	U
Semivolatile Organics																		
2-Methylnaphthalene	NSA	ug/L	0.239	U	0.237	U	0.237	U	0.238	U	0.24	U	0.241	U	0.238	U	0.13	

Notes: aa - MTCA Method B cleanup value.
a - Primary Drinking Water Standard, 40 CFR.
b - Secondary Drinking Water standard, 40 CFR.
c - Based upon Washington State background concentration.
NSA - No Standard Available.
U - The analyte was tested for, but was not detected above the practical quantitation limit (PQL).

FIGURE

E 1713000
N 140000

E 1714000
N 140000

E 1711000
N 137000

SE SUMMIT LANDSBURG RD

PIPELINE

CEDAR RIVER ROAD

LMW-4

LMW-2

Portal 2

LMW-6

LMW-1

Fenced Area

LMW-7

LMW-5

LMW-3

Portal 3

Power Lines

KENT-KANGLEY RD.

N

0 400 800
FEET

Legend

LMW-5 Landsburg Monitoring Well

Portal 3 Portal Seepage Locations

Fence

Trail

Unpaved Road

Building

NOTES:

1) Interim groundwater monitoring locations are underlined.

FIGURE 1

GROUNDWATER MONITORING LOCATIONS

LANDSBURG MINE SITE/IGMP/WA

Golder Associates

flemos|K:\Projects\1992\9231000\R270\94176.dwg|6-28-0 14:01|x:-|l:-

APPENDIX A

-002.14

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000 002. R272

Site Location North Portal Seep Sample ID Portal Seep 100303

Sampling Location Bench below main seep

Technical Procedure Reference(s) TA 1.2-20 TP 1.2-23

Type of Sampler driven pvc well screen & peristaltic pump

Date 10/03/03 Time 1045

Media water Station portal seep

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of statistic well water and purged water, etc.)

seep flow ~4 gpm purge rate in peristaltic 444 ml/min

Sample Description clear water

Field Measurements on Sample (pH, conductivity, etc.) Temp 10.87 specific conductivity 7.82 uS/cm DO 0.71 mg/L pH 6.61 Turb 20.1 NTUs slight sulfur odor present at sample location

Aliquot Amount	Container	Preservation/Amount
4- 1 liter	glass amber	unpreserved
2- 1 lit	HDPE	unpreserved
1- 1 lit	HDPE	HNO_3
3-	VOA Vial	HCL

Sampler (signature) Tony Martin Date 10/03/03

Supervisor (signature) Date

OH/60652/7-11-95

Golder Associates

RECORD OF WATER LEVEL READINGS

Job. No. 923-1000 Project Name LANDSBURG Location King Co., WA

Bore-Hole No.	Date	Time	Measuring Device/ Serial No.	Measurement Point (M.P.)	Water Level below M.P.	Correction to Survey Mark	Survey Mark Elevation	Water Level Elevation	By	Comments
LMW-3	10/9/03			Top of Plate	13.68				TMS	Before packer inflate
				~~Mark~~	~~14.53~~	~~TMS~~				" " "
				Top of Plate	13.68					After pack inflate
		1120		"	13.28					
		1130		"	13.28					
		1510		"	13.78					@ End of Sampling and Packer Deflated
LMW-5		1605		Top of Plate	15.23					Before Pack. inflate
		1605		~~MARK~~	15.89	TMS				" " "
		1630		Top of Plate	15.24					After " "
				" " "	15.26					@ End of Semple & Packer deflated.
LMW-2	10-10-03	1335		~~MARK~~	~~8.80~~	~~TMS~~				~~Before packer Inflat~~
				Top of Plate	8.13					No packer
				" "						
	10-13-03	1440		" "	8.10					
LMW-6	10-10	1700		~~MARK~~	~~52.45~~	~~TMS~~				Before Packer Inflate
		1700		Top of Plate	51.98					" " "
		1705		" " "	50.90					After Pack. Inflate
	10-13-03	1600		" " "	52.76					
LMW-4	10-13-03	1115		~~MARK~~	~~10.97~~	~~TMS~~				Before Pack. Inflate
		1115		Top of Plate	10.25					" " "
		1145		" " "	10.24					After Pack. Inflate
		1430		" " "	10.26					After Pack Deflate
LMW-7	10-13	1500		Top of Plate	231.30					NO PACKER

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-703101Ø3

Sampling Location

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grunfos, Teflon Discharge Tube.

Date Oct. 13, 2003 Time 1210

Media GROUNDWATER Station LMW-7

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL= 231.30 @ 1500 ; No Sandpak, No packer

4" Casing Volume = 25.74, 3x Volume = 77 gal.

Sample Description Clear Groundwater, discharged to ground.

Field Measurements on Sample (pH, conductivity, etc.) See attached data

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. + ANIONS		Cool, 4°C
250 ml / Carb.-Bicarbonate		
500 ml / TDS		
500 ml / Priority Metals		HNO_3
500 ml / CYANIDE		NaOH
1 Lit. / SVOC	~~GLASS, Amber~~	Cool, 4°C
1+1 Lit / Pest + PCB		" "
1 Lit. / NWTPH-Diesel$_x$		HCl

Sampler (signature) [signature] Date Oct. 13, 2003

Supervisor (signature) [signature] Date

→ 3x VOA (40ml) / 8260 + NWTPH-G$_x$ / HCl

Golder Associates

LMW-7 / Oct. 18 Tues, 2003 / LANDSBURG #923-1000

Flow	1.54 g/min ~~1.85~~ →		1.71 g/m.									
Time	1030	1040	1045	1055	1110	1125	1140	1145	1150	1200	1210	1210 SAMPLE / 1220 END
GW Lev.	NA											
pH	7.84	7.42	7.42	7.42	7.38	7.30	7.19	7.03	6.94	6.55	6.35	6.46 →
Condux (uS)	301	226	205	180.5	165.3	162.7	160.9	160.6	160.4	160.1	160.2	161.8 →
DO (mg/L)	3.78	0.61	0.47	0.54	0.43	1.69 X	0.43	0.43	0.42	0.41	0.41	0.43 →
Turb (NTU)	2.14	15.9	10.3	6.08	3.78	3.35	2.48	2.34	2.03	2.25	1.94	1.39 →
Temp (°C)	11.8	12.0	12.0	11.9	11.8	11.8	11.8	11.8	11.8	11.7	11.7	11.7 →
Purge Vol.	—	~15 gal	20	~40	66	92	~118	~127	~135	~152	169	

NOTES: Flow frequency for 1.5-1.75 gal/min = 350 hz
X- Erroneous - air entrained to catch vessel.
Discharge purge water to ground.

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-6031010

Sampling Location @ intersection of approximately SE 252nd St. and SE Summit-Landsburg Rd.; ~1300 ft. Access Road @ Gate.

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grunfos Pump; Tefion discharge tube.

Date Oct. 10, 2003 Time 1845

Media GROUNDWATER Station LMW-6

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL = 51.98 ft.; SandPak + Case Vol. = 25.0 gal.

3 x Well Volume = 75 gal.

Packer pressure @ 100 psi to hold water Level in casing, above packer.

Sample Description Clear water, Moderate H_2S odor.

Field Measurements on Sample (pH, conductivity, etc.) See attached data

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. + ANIONS		Cool, 4°C
250 ml / Carb.-Bicarbonate		
500ml / TDS		
500ml / Priority Metals		HNO_3
500 ml / CYANIDE		NaOH
1 Lit. / SVOC	GLASS, Amber	Cool, 4°C
1+1 Lit / Pest + PCB		" "
1 Lit. / NWTPH-Diesel x		HCl

Sampler (signature) [signature] Date Oct. 10, 2003

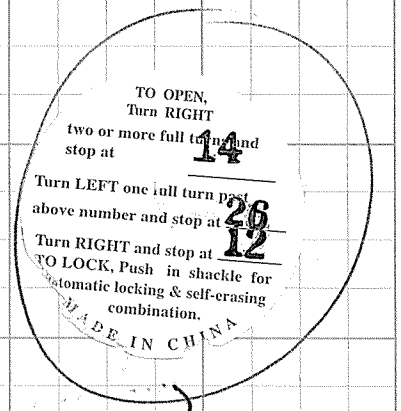
Supervisor (signature) [signature] Date

→ 3x VOA (40ml) / 8260 + NWTPH-Gx / HCl

Golder Associates

LMW-6 Startup 1735 / Oct. 10, 2003 / # 923-1000 TWS

Flow	2.14 gpm		Flow RESET ↓	2.14 ↓	→		SAMPLE ↓
GW Level	51.98 bgs		74.96	74.93	74.92	74.92	
TIME	1710 ~~35~~	1745	1755	1815	1830	1840	1845
pH	5.65	5.77	5.82	6.04	~~8~~6.24	7.26	7.71
Conduc. (uS)	118.2	103.5	94.7	93.2	91.9	91.5	91.4
D.O. mg/L	2.61	1.94	0.99	0.47	0.34	0.32	~~0.33~~
Turb. (NTU)	22.9	23.0	8.27	18.4	2.37	1.78	25.9 *
Temp. °C	9.6	9.6	9.7	9.7	9.7	9.7	9.9
Purge Vol (gal)	~	~25	~46	~80	112.	~135	



New Lock installed. TWS

NOTES: Packer inflate to ~50 psi = 53.92 ft. Head. Ⓐ Inflate pressure increased to 100 psi a- 230 hz down from 250 hz. (But previous 200 hz gave 2.14 gpm.)

* Due to change in flow.

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-5031009

Sampling Location Approx. 1000 ft. North of 262 Ave. SE intersection with Kent-Kangley Rd. Under Power Lines, West side of fence.

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grunfos, with well packer, Tefion discharge

Date Oct. 09, 2003 Time 1810

Media GROUNDWATER Station LMW-5

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL = 15.24 ft.; Casing Vol. from Packer to Sand Pak = 4.5gal.
Casing + Sand Pak Vol. (10ft total) = 11.41 gal.
Total Volume = 15.9gal. 3x Well Vol. = 47.6 gal.

Sample Description Moderate to heavy H_2S odor. Clear G.W.
Field Duplicate sample collected here. = LMW-9031009.

Field Measurements on Sample (pH, conductivity, etc.) See attached data

Duplicate Volumes

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. & ANIONS		Cool, 4°C
250ml / Carb.-Bicarbonate		
500ml / TDS		
500ml / Priority Metals		HNO_3
500 ml / CYANIDE		NaOH
1 Lit. / SVOC	GLASS, Amber	Cool, 4°C
1+1 Lit / Pest + PCB		" "
1 Lit. / NWTPH-Diesel x		HCl

Sampler (signature) [signature] Date Oct. 10, 2003

Supervisor (signature) _____ Date _____

→ 3x VOA (40ml) / 8260 + NWTPH-G x / HCl

Golder Associates

LMW-5 Start up @ 1630 / Oct. 9, 2003 #923-1000

FLOW	~~2 gal/min~~ → 1.78 gal/min	→	2.4 gal. min. @ end					
TIME	1675	1710	1720	1730	1750	1805	SAMPLE	END
Depth	15.23	15.25	—	15.25	15.25	15.25	15.25	15.25
pH		6.78	6.76	6.88	7.16	7.25	7.24	7.30
Condne mS		90.7 ms X	80.9 X	73.4 X	63.4 X	60.6 X	127 (a)	121.0 (a)
DO (mg/L)	0.89	0.70	0.44	0.42	0.35	0.35	0.46	0.43
Temp (°C)	11.5	11.1	11.0	10.9	10.9	10.9	10.9	11.0
Turb. (NTU)	NA	1.48	1.48	1.48	1.44	1.30	1.30	1.30
Volume	~~~30~~	~~45~~ 66	83	100	135			~160

Notes: N_2 press. @ 130 psi.
X - Conductivit, meter not reliable.
a - Tad shows up w/ new Conduct. Meter. Calibrate & read final aliquots.

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-4031013

Sampling Location @ intersection of SE 253rd St. and SE Summit-Landsburg Rd.; ~50 ft. WEST of LMW-2 wellhead.

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grunfos with Well Packer, Teflon discharge.

Date Oct. 13, 2003 Time 1330

Media GROUNDWATER Station LMW-4

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)
SWL = 10.25 ft; SandpaK + Case Vol = 23.98 gal; Casing Vol. from Packer to SandpaK = 2.48 gal.; Well Vol. Total 26.5 gal.
3x Well Volume = 79.4 gal.

Sample Description Heavy H_2S odor in clear water. Reaction of water w/ purge drum leaves water murky & black. Purge drums purchased 10-13-03; Previous drums stolen.

Field Measurements on Sample (pH, conductivity, etc.) See attached data

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. & ANIONS		Cool, 4°C
250 ml / Carb.-Bicarbonate		
500 ml / TDS		
500 ml / Priority Metals		HNO_3
500 ml / CYANIDE		NaOH
1 Lit. / SVOC	GLASS, Amber	Cool, 4°C
1+1 Lit / Pest + PCB		" "
1 Lit. / NWTPH-Diesel		HCl

Sampler (signature) [signature] Date Oct. 13, 2003

Supervisor (signature) [signature] Date

→ 3x VOA (40ml) / 8260 + NWTPH-Gx / HCl

Golder Associates

LMW-4 STARTUP ~~1245~~ 1220 Oct. 13, 2003 TMG #923-1000

FLOW (gpm)		1.85 →					
GW Level (ft)	10.25	10.25	10.26	10.26	10.26	Sample ↓	10.26
TIME	~~1145~~ 1230	1245	1300	1310	1323	1330	1335
pH	5.43	6.37	5.43	5.44	5.44		5.45
Conduct. (uS)	118.8 (a)	91.9	84.3	82.5	81.4		81.1
D.O. (mg/L)	0.55	0.44	0.34	0.34	0.32		0.38
Turb. (NTU)	6.78	5.79	3.62	3.62	1.62		1.62
Temp °C	10.8	10.8	10.8	10.8	10.8		10.8
Purge Vol.	5	28	~55	74	98		120

Notes: 115 psi set for packer. 1240 Heavy odor H_2S. a-Conductivity meter will not calib. Conduct. meas. data suspect.
150 hz for flow Controller.

TMG

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-3031009

Sampling Location Approx. 1000 ft. North of 262 Ave. SE intersection with SE KENT-KANGLEY road. Under Power Line Corridor.

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grundfos with Well Packer, Teflon-discharge.

Date Oct. 9, 2003 Time 1405

Media GROUNDWATER Station LMW-3

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL = 13.68 ft.; SandpaK + Casing Vol. = 20.2g; Case Vol. from packer to SandpaK = 5.1 gal.; Total Volume Well = 25.6 gal.
3 x Well Volume = 77 gal.

Sample Description Clear water; Purge Drums expelled and reused.

Field Measurements on Sample (pH, conductivity, etc.) See attached data
Conductivity meas. data not reliable due to instrument failure.

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. + ANIONS		Cool, 4°C
250 ml / Carb.-Bicarbonate		
500ml / TDS		
500ml / Priority Metals		HNO_3
500 ml / CYANIDE		NaOH
1 Lit. / SVOC	GLASS, Amber	Cool, 4°C
1+1 Lit / Pest + PCB		" "
1 Lit. / NWTPH-Diesel$_x$		HCl

Sampler (signature) [signature] Date Oct. 10, 2003

Supervisor (signature) [signature] Date

→ 3x VOA (40ml) / 8260 + NWTPH-G$_x$ / HCl

Golder Associates

LMW-#3 / Start Purge 1140 / Oct. 9, 2003 TMS

								SAMPLE	END
FLOW	2 gal/min								
TIME	1140	1155	1215*	1305 Startup	1315	1330	1350	1405	1415
pH	8.20	8.29			7.34	7.98	8.80	8.70	8.73
(µS) Conduc.	143.4	123.0			49.2#	46.3	—	—	—
GW Level	13.28	13.28		13.28	13.28	13.29			
DO (mg/L)	0.39	0.37			0.39	0.41	0.35	0.41	0.40
Temp (°C)	11.0	11.0			11.3	11.2	11.2	11.3	11.5
Turb.	0.83	0.57			1.27	0.68	0.52	0.55	0.53
Volume (gal)		~55			~75	~100	120	~125	~140

Notes: * Purge flow shut down due to instrument failure. pH & Conduct. meters quit & need to be dried out. ~70 gal. purge
Values are suspect. TMS

SAMPLE INTEGRITY DATA SHEET

Plant/Site LANDSBURG MINE Project No. 923-1000

Site Location Ravensdale, WA Sample ID LMW-2031010

Sampling Location @ intersection of SE 253rd St. and SE Summit-Landsburg Rd. ; ~50 ft. east of LMW-4 wellhead.

Technical Procedure Reference(s) TP-1.2-20, TP-1.2-23 TP-1.4-6a

Type of Sampler Dedicated Grunfos Pump; Teflon discharge tube.

Date Oct. 10, 2003 Time 1445

Media GROUNDWATER Station LMW-2

Sample Type: (grab) time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL = 8.13 ft. ; SandPak + Case Vol = 15.18 gal. ; Case Vol. to the SandPak = 10.90 gal. ; Total Vol. Well = 26.08 gal

3x WELL VOLUMES = 78 gal.

Sample Description Moderate to heavy H_2S odor in clear water.

Field Measurements on Sample (pH, conductivity, etc.) See attached data

No packer in this well. Purge drums expelled and reused.

Aliquot Amount	Container	Preservation/Amount
125 ml / NO_2+NO_3-N	HDPE	H_2SO_4
250 ml / Alk. + ANIONS	↓	Cool, 4°C
250 ml / Carb.-Bicarbonate	↓	↓ ↓
500 ml / TDS	↓	↓
500 ml / Priority Metals	↓	HNO_3
500 ml / CYANIDE	↓	NaOH
1 Lit. / SVOC	GLASS, Amber	Cool, 4°C
1+1 Lit / Pest + PCB	↓	" "
1 Lit. / NWTPH-Diesel x	↓	HCl

Sampler (signature) cm Date Oct. 10, 2003

Supervisor (signature) SPP Date

→ 3x VOA (40ml) / 8260 + NWTPH-G_x / HCl

Golder Associates

LMW-2 Startup 1350 / OCT-10, 2003 TMB / #923-1000

Flow	2.06 gal/min						
GW Level	8.13	8.15	8.15	~	8.16	SAMPLE	END 8.16
TIME	1355	1405	1415	1430	1440	1445	1455
pH	3.86 *	6.30	5.66	5.41	5.47	5.67	5.66
Conduc. uS	115	119.5	119.6	119.2	119.1		119.2
D.O. mg/L	0.54	0.44	0.42	0.27	0.26		0.32
Turb. NTU	1.12	0.71	0.85	0.80	0.76		0.82
Temp. °C	10.7	10.8	10.9	10.8	10.8		~~11.0~~ 10.9 TMB
Purge Vol. (gal).	10.3	30.9	~52	~83	~103		~120

Notes: * pH Meter recalib. / Strong H_2S odor @ well purge.
55 gal. in 30 min.

APPENDIX B

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 20, 2003

Doug Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 923-1000.002.R272
Laboratory Reference No. 0310-027

Dear Doug:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2003.

Please note that the subcontracted metals analyses by Graphite Furnace methods will follow in a later report.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

Case Narrative

Samples were collected on October 3, 2003, and received by the laboratory on October 3, 2003. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a footnote reference and will be included on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260B Analysis

No tentatively identified compounds (TICs) were found in the sample.

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

HARDNESS
EPA 6010B/SM2340B

Date Analyzed: 10-8&9-03

Matrix: Water
Units: mg equivalent CaCO3/L (ppm)

Lab ID: 10-027-01
Client ID: Portal Seep 100303

Analyte	Method	Result	PQL
Hardness (calc.)	6010B/2340B	**390**	50

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

HARDNESS
EPA 6010B/SM2340B
METHOD BLANK QUALITY CONTROL

Date Analyzed: 10-8&9-03

Matrix: Water
Units: mg equivalent CaCO3/L (ppm)

Lab ID: MB1008D1

Analyte	Method	Result	PQL
Hardness (calc.)	6010B/2340B	**ND**	5.6

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

HARDNESS
EPA 6010B/SM2340B
DUPLICATE QUALITY CONTROL

Date Analyzed: 10-8&9-03

Matrix: Water
Units: mg equivalent CaCO3/L (ppm)

Lab ID: 10-027-01

Analyte	Method	Sample Result	Duplicate Result	RPD	Flags	PQL
Hardness (calc.)	6010B/2340B	**393**	**392**	0		50

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

HARDNESS
EPA 6010B/SM2340B
MS/MSD QUALITY CONTROL

Date Analyzed: 10-8&9-03

Matrix: Water
Units: mg equivalent CaCO3/L (ppm)

Lab ID: 10-027-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Hardness (calc.)	1450	**1640**	86	**1640**	86	0	

Date of Report: October 20, 2003
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Project: 923-1000.002.R272

VOLATILES by EPA 8260B
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Date Extracted:	10-14-03
Date Analyzed:	10-14-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-027-01
Client ID:	**Portal Seep 100303**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Lab ID: 10-027-01
Client ID: Portal Seep 100303

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	103	63-130
Toluene, d8	105	78-113
4-Bromofluorobenzene	97	77-109

Date of Report: October 20, 2003
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VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
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Date Extracted:	10-14-03
Date Analyzed:	10-14-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1014W1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

Date of Report: October 20, 2003
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METHOD BLANK QUALITY CONTROL
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Lab ID: MB1014W1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	107	63-130
Toluene, d8	108	78-113
4-Bromofluorobenzene	86	77-109

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 10-14-03
Date Analyzed: 10-14-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB1014W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	12.4	124	12.6	126	50-129	
Benzene	10.0	12.8	128	12.3	123	62-131	
Trichloroethene	10.0	10.9	109	10.8	108	71-117	
Toluene	10.0	11.8	118	11.9	119	71-123	
Chlorobenzene	10.0	11.8	118	11.7	117	80-120	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	2	15	
Benzene	4	10	
Trichloroethene	1	12	
Toluene	1	15	
Chlorobenzene	1	6	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

SEMIVOLATILES by EPA 8270C/SIM
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Date Extracted:	10-9-03
Date Analyzed:	10-10-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-027-01
Client ID:	**Portal Seep 100303**

Compound:	**Results**	**Flags**	**PQL**
Aniline	ND		0.99
bis(2-Chloroethyl)ether	ND		2.0
Phenol	ND		0.99
2-Chlorophenol	ND		0.99
1,3-Dichlorobenzene	ND		0.99
1,4-Dichlorobenzene	ND		0.99
1,2-Dichlorobenzene	ND		0.99
Benzyl alcohol	ND		5.0
bis(2-chloroisopropyl)ether	ND		9.9
2-Methylphenol	ND		0.99
Hexachloroethane	ND		0.99
N-Nitroso-di-n-propylamine	ND		0.99
4-Methylphenol	ND		0.99
Nitrobenzene	ND		0.99
Isophorone	ND		0.99
2-Nitrophenol	ND		5.0
2,4-Dimethylphenol	ND		0.99
bis(2-Chloroethoxy)methane	ND		0.99
2,4-Dichlorophenol	ND		5.0
Benzoic acid	ND		25
1,2,4-Trichlorobenzene	ND		0.99
Naphthalene	ND		0.099
4-Chloroaniline	ND		0.99
Hexachlorobutadiene	ND		0.99
4-Chloro-3-methylphenol	ND		0.99
2-Methylnaphthalene	0.13		0.099
1-Methylnaphthalene	ND		0.099

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
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SEMIVOLATILES by EPA 8270C/SIM
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Lab ID: 10-027-01
Client ID: **Portal Seep 100303**

Compound:	**Results**	**Flags**	**PQL**
Hexachlorocyclopentadiene	ND		9.9
2,4,6-Trichlorophenol	ND		2.0
2,4,5-Trichlorophenol	ND		2.0
2-Chloronaphthalene	ND		0.99
2-Nitroaniline	ND		2.0
Acenaphthylene	ND		0.099
Dimethylphthalate	ND		2.0
2,6-Dinitrotoluene	ND		2.0
Acenaphthene	ND		0.099
3-Nitroaniline	ND		5.0
2,4-Dinitrophenol	ND		25
Dibenzofuran	ND		0.99
2,4-Dinitrotoluene	ND		9.9
4-Nitrophenol	ND		9.9
Fluorene	ND		0.099
4-Chlorophenyl-phenylether	ND		0.99
Diethylphthalate	ND		2.0
4-Nitroaniline	ND		5.0
4,6-Dinitro-2-methylphenol	ND		9.9
n-Nitrosodiphenylamine	ND		0.99
4-Bromophenyl-phenylether	ND		0.99
Hexachlorobenzene	ND		0.99
Pentachlorophenol	ND		5.0
Phenanthrene	ND		0.099
Anthracene	ND		0.099
Carbazole	ND		0.99
Di-n-butylphthalate	ND		0.99
Fluoranthene	ND		0.099
Benzidine	ND		25
Pyrene	ND		0.099

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
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Lab ID: 10-027-01
Client ID: Portal Seep 100303

Compound:	Results	Flags	PQL
Butylbenzylphthalate	ND		2.0
3,3'-Dichlorobenzidine	ND		4.0
Benzo[a]anthracene	ND		0.0099
Chrysene	ND		0.0099
bis(2-Ethylhexyl)phthalate	ND		5.0
Di-n-octylphthalate	ND		0.0099
Benzo[b]fluoranthene	ND		0.0099
Benzo[k]fluoranthene	ND		0.0099
Benzo[a]pyrene	ND		0.0099
Indeno[1,2,3-cd]pyrene	ND		0.0099
Dibenz[a,h]anthracene	ND		0.0099
Benzo[g,h,i]perylene	ND		0.0099

Surrogate :	Percent Recovery	Control Limits
2-Fluorophenol	38	21 - 100
Phenol-d6	27	10 - 94
Nitrobenzene-d5	74	35 - 114
2-Fluorobiphenyl	80	43 - 116
2,4,6-Tribromophenol	91	10 - 123
Terphenyl-d14	93	33 - 144

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
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SEMIVOLATILES by EPA 8270C/SIM
METHOD BLANK QUALITY CONTROL
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Date Extracted:	10-9-03
Date Analyzed:	10-10-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1009W1

Compound:	Results	Flags	PQL
Aniline	ND		1.0
bis(2-Chloroethyl)ether	ND		2.0
Phenol	ND		1.0
2-Chlorophenol	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
Benzyl alcohol	ND		5.0
bis(2-chloroisopropyl)ether	ND		10
2-Methylphenol	ND		1.0
Hexachloroethane	ND		1.0
N-Nitroso-di-n-propylamine	ND		1.0
4-Methylphenol	ND		1.0
Nitrobenzene	ND		1.0
Isophorone	ND		1.0
2-Nitrophenol	ND		5.0
2,4-Dimethylphenol	ND		1.0
bis(2-Chloroethoxy)methane	ND		1.0
2,4-Dichlorophenol	ND		5.0
Benzoic acid	ND		25
1,2,4-Trichlorobenzene	ND		1.0
Naphthalene	ND		0.10
4-Chloroaniline	ND		1.0
Hexachlorobutadiene	ND		1.0
4-Chloro-3-methylphenol	ND		1.0
2-Methylnaphthalene	ND		0.10
1-Methylnaphthalene	ND		0.10

Date of Report: October 20, 2003
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METHOD BLANK QUALITY CONTROL
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Lab ID: MB1009W1

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND		10
2,4,6-Trichlorophenol	ND		2.0
2,4,5-Trichlorophenol	ND		2.0
2-Chloronaphthalene	ND		1.0
2-Nitroaniline	ND		2.0
Acenaphthylene	ND		0.10
Dimethylphthalate	ND		2.0
2,6-Dinitrotoluene	ND		2.0
Acenaphthene	ND		0.10
3-Nitroaniline	ND		5.0
2,4-Dinitrophenol	ND		25
Dibenzofuran	ND		1.0
2,4-Dinitrotoluene	ND		1.0
4-Nitrophenol	ND		1.0
Fluorene	ND		0.10
4-Chlorophenyl-phenylether	ND		1.0
Diethylphthalate	ND		2.0
4-Nitroaniline	ND		5.0
4,6-Dinitro-2-methylphenol	ND		10
n-Nitrosodiphenylamine	ND		1.0
4-Bromophenyl-phenylether	ND		1.0
Hexachlorobenzene	ND		1.0
Pentachlorophenol	ND		5.0
Phenanthrene	ND		0.10
Anthracene	ND		0.10
Carbazole	ND		1.0
Di-n-butylphthalate	ND		5.0
Fluoranthene	ND		0.10
Benzidine	ND		25
Pyrene	ND		0.10

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METHOD BLANK QUALITY CONTROL
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Lab ID: MB1009W1

Compound:	Results	Flags	PQL
Butylbenzylphthalate	ND		2.0
3,3'-Dichlorobenzidine	ND		4.0
Benzo[a]anthracene	ND		0.010
Chrysene	ND		0.010
bis(2-Ethylhexyl)phthalate	ND		5.0
Di-n-octylphthalate	ND		1.0
Benzo[b]fluoranthene	ND		0.010
Benzo[k]fluoranthene	ND		0.010
Benzo[a]pyrene	ND		0.010
Indeno[1,2,3-cd]pyrene	ND		0.010
Dibenz[a,h]anthracene	ND		0.010
Benzo[g,h,i]perylene	ND		0.010

Surrogate :	Percent Recovery	Control Limits
2-Fluorophenol	42	21 - 100
Phenol-d6	30	10 - 94
Nitrobenzene-d5	73	35 - 114
2-Fluorobiphenyl	75	43 - 116
2,4,6-Tribromophenol	86	10 - 123
Terphenyl-d14	93	33 - 144

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

SEMIVOLATILES by EPA 8270C/SIM
SB/SBD QUALITY CONTROL

Date Extracted: 10-9-03
Date Analyzed: 10-10-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB1009W1

Compound:	MB Amount	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
Phenol	ND	100	32.4	32	32.0	32	12-110	
2-Chlorophenol	ND	100	69.9	70	68.8	69	27-123	
1,4-Dichlorobenzene	ND	50	30.9	62	29.9	60	36-97	
N-Nitroso-di-n-propylamine	ND	50	36.0	72	36.1	72	41-116	
1,2,4-Trichlorobenzene	ND	50	32.9	66	32.7	65	39-98	
4-Chloro-3-methylphenol	ND	100	84.0	84	83.7	84	23-97	
Acenaphthene	ND	50	38.4	77	37.4	75	46-118	
2,4-Dinitrotoluene	ND	50	42.2	84	42.3	85	24-96	
4-Nitrophenol	ND	100	39.2	39	38.7	39	10-80	
Pentachlorophenol	ND	100	84.3	84	85.9	86	9-103	
Pyrene	ND	50	45.2	90	45.6	91	26-127	

	RPD	RPD Limits	Flags
Phenol	1	42	
2-Chlorophenol	2	40	
1,4-Dichlorobenzene	3	30	
N-Nitroso-di-n-propylamine	0	38	
1,2,4-Trichlorobenzene	1	35	
4-Chloro-3-methylphenol	0	42	
Acenaphthene	3	31	
2,4-Dinitrotoluene	0	38	
4-Nitrophenol	1	50	
Pentachlorophenol	2	50	
Pyrene	1	31	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

PCBs by EPA 8082

Date Extracted:	10-8-03
Date Analyzed:	10-10-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-027-01
Client ID:	**Portal Seep 100303**

	Result	**PQL**
Aroclor 1016:	**ND**	0.048
Aroclor 1221:	**ND**	0.048
Aroclor 1232:	**ND**	0.048
Aroclor 1242:	**ND**	0.048
Aroclor 1248:	**ND**	0.048
Aroclor 1254:	**ND**	0.048
Aroclor 1260:	**ND**	0.048

Surrogate	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	61	30-138

Flags:

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

PCBs by EPA 8082
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-8-03
Date Analyzed: 10-10-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1008W1

	Result	PQL
Aroclor 1016:	**ND**	0.050
Aroclor 1221:	**ND**	0.050
Aroclor 1232:	**ND**	0.050
Aroclor 1242:	**ND**	0.050
Aroclor 1248:	**ND**	0.050
Aroclor 1254:	**ND**	0.050
Aroclor 1260:	**ND**	0.050

Surrogate	Percent Recovery	Control Limits
Decachlorobiphenyl	71	30-138

Flags:

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

PCBs by EPA 8082
MS/MSD QUALITY CONTROL

Date Extracted: 10-8-03
Date Analyzed: 10-10-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Spike Level: 2.00

	MS	Percent Recovery	MSD	Percent Recovery	RPD
Aroclor 1260:	1.30	65	1.26	63	3
PQL	0.10		0.10		

Surrogate	Percent Recovery	Percent Recovery	Control Limits
Decachlorobiphenyl	62	65	15-138

Flags:

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

ORGANOCHLORINE PESTICIDES by EPA 8081A

Date Extracted:	10-8-03
Date Analyzed:	10-10-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-027-01
Client ID:	**Portal Seep 100303**

Analyte	Result	PQL	Flags
alpha-BHC	**ND**	0.0048	
gamma-BHC	**ND**	0.0048	
Heptachlor	**ND**	0.0048	
Aldrin	**ND**	0.0048	
beta-BHC	**ND**	0.0048	
delta-BHC	**ND**	0.0048	
Heptachlor epoxide	**ND**	0.0048	
Endosulfan I	**ND**	0.0048	
4,4'-DDE	**ND**	0.0048	
Dieldrin	**ND**	0.0048	
Endrin	**ND**	0.0048	
Endosulfan II	**ND**	0.0048	
4,4'-DDD	**ND**	0.0048	
4,4'-DDT	**ND**	0.0048	
Endrin Aldehyde	**ND**	0.0048	
Endosulfan Sulfate	**ND**	0.0048	
Methoxychlor	**ND**	0.0048	
Endrin ketone	**ND**	0.0048	
Toxaphene	**ND**	0.050	
Chlordane (Technical)	**ND**	0.048	

Surrogate	Percent Recovery	Control Limits
TCMX	71	31 - 111
DCB	56	30 - 114

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

ORGANOCHLORINE PESTICIDES by EPA 8081A METHOD BLANK QUALITY CONTROL

Date Extracted: 10-8-03
Date Analyzed: 10-10-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1008W1

Analyte	Result	PQL	Flags
alpha-BHC	**ND**	0.0050	
gamma-BHC	**ND**	0.0050	
Heptachlor	**ND**	0.0050	
Aldrin	**ND**	0.0050	
beta-BHC	**ND**	0.0050	
delta-BHC	**ND**	0.0050	
Heptachlor epoxide	**ND**	0.0050	
Endosulfan I	**ND**	0.0050	
4,4'-DDE	**ND**	0.0050	
Dieldrin	**ND**	0.0050	
Endrin	**ND**	0.0050	
Endosulfan II	**ND**	0.0050	
4,4'-DDD	**ND**	0.0050	
4,4'-DDT	**ND**	0.0050	
Endrin Aldehyde	**ND**	0.0050	
Endosulfan Sulfate	**ND**	0.0050	
Methoxychlor	**ND**	0.0050	
Endrin ketone	**ND**	0.0050	
Toxaphene	**ND**	0.050	
Chlordane (Technical)	**ND**	0.050	

Surrogate	Percent Recovery	Control Limits
TCMX	63	31 - 111
DCB	73	30 - 114

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

ORGANOCHLORINE PESTICIDES by EPA 8081A MS/MSD QUALITY CONTROL

Date Extracted: 10-8-03
Date Analyzed: 10-10-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
gamma-BHC	0.0500	0.0373	75	0.0362	72	3	
Heptachlor	0.0500	0.0383	77	0.0376	75	2	
Aldrin	0.0500	0.0369	74	0.0368	74	0	
Dieldrin	0.125	0.106	85	0.103	82	3	
Endrin	0.125	0.103	82	0.102	82	1	
4,4'-DDT	0.125	0.0963	77	0.0931	75	3	

Surrogate	Percent Recovery	Percent Recovery	Control Limits
TCMX	77	70	31 - 111
DCB	62	58	30 - 114

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

pH
EPA 9040B

Date Extracted:	10-3-03
Date Analyzed:	10-3-03
Matrix:	Water

Client ID	Lab ID	pH (@ 25°C)
Portal Seep 100303	10-027-01	7.1

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B/7470A
Page 1 of 2

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01
Client ID: Portal Seep 100303

Analyte	Method	Result	PQL
Aluminum	6010B	**ND**	110
Antimony	6010B	**ND**	60
Barium	6010B	**280**	56
Beryllium	6010B	**ND**	5.0
Cadmium	6010B	**ND**	5.0
Calcium	6010B	**78000**	10000
Chromium	6010B	**ND**	10
Cobalt	6010B	**ND**	11
Copper	6010B	**ND**	11
Iron	6010B	**1500**	56

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B/7470A
Page 2 of 2

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01
Client ID: Portal Seep 100303

Analyte	Method	Result	PQL
Magnesium	6010B	**48000**	10000
Manganese	6010B	**200**	11
Mercury	7470A	**ND**	0.20
Nickel	6010B	**ND**	40
Potassium	6010B	**2500**	1100
Silver	6010B	**ND**	10
Sodium	6010B	**19000**	1100
Vanadium	6010B	**ND**	11
Zinc	6010B	**ND**	11

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL
Page 1 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1008D1&MB1014D1

Analyte	Method	Result	PQL
Aluminum	6010B	**ND**	110
Antimony	6010B	**ND**	60
Barium	6010B	**ND**	56
Beryllium	6010B	**ND**	5.0
Cadmium	6010B	**ND**	5.0
Calcium	6010B	**ND**	1100
Chromium	6010B	**ND**	10
Cobalt	6010B	**ND**	11
Copper	6010B	**ND**	11
Iron	6010B	**ND**	56

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL
Page 2 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1008D1&MB1014D1

Analyte	Method	Result	PQL
Magnesium	6010B	**ND**	1100
Manganese	6010B	**ND**	11
Nickel	6010B	**ND**	40
Potassium	6010B	**ND**	1100
Silver	6010B	**ND**	10
Sodium	6010B	**ND**	1100
Vanadium	6010B	**ND**	11
Zinc	6010B	**ND**	11

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 7470A
METHOD BLANK QUALITY CONTROL
Page 3 of 3

Date Extracted:	10-17-03
Date Analyzed:	10-17-03
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1010D1

Analyte	Method	Result	PQL
Mercury	7470A	**ND**	0.20

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
DUPLICATE QUALITY CONTROL
Page 1 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Aluminum	**ND**	**ND**	NA	110	
Antimony	**ND**	**ND**	NA	60	
Barium	**275**	**276**	0	56	
Beryllium	**ND**	**ND**	NA	5.0	
Cadmium	**ND**	**ND**	NA	5.0	
Calcium	**77600**	**77600**	0	10000	
Chromium	**ND**	**ND**	NA	10	
Cobalt	**ND**	**ND**	NA	11	
Copper	**ND**	**ND**	NA	11	
Iron	**1450**	**1440**	1	56	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
DUPLICATE QUALITY CONTROL
Page 2 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Magnesium	**48500**	**48200**	0	10000	
Manganese	**202**	**202**	0	11	
Nickel	**ND**	**ND**	NA	40	
Potassium	**2550**	**2530**	1	1100	
Silver	**ND**	**ND**	NA	10	
Sodium	**19100**	**19000**	0	1100	
Vanadium	**ND**	**ND**	NA	11	
Zinc	**ND**	**ND**	NA	11	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 7470A
DUPLICATE QUALITY CONTROL
Page 3 of 3

Date Extracted: 10-17-03
Date Analyzed: 10-17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-089-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.40	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
MS/MSD QUALITY CONTROL
Page 1 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Aluminum	22000	**20600**	94	**20700**	94	0	
Antimony	2200	**2150**	98	**2110**	96	2	
Barium	2200	**2380**	96	**2400**	97	1	
Beryllium	1100	**1010**	92	**1010**	92	0	
Cadmium	1100	**927**	84	**929**	84	0	
Calcium	200000	**257000**	90	**257000**	90	0	
Chromium	2200	**1910**	87	**1920**	87	1	
Cobalt	1100	**973**	88	**978**	89	1	
Copper	2200	**2080**	94	**2070**	94	0	
Iron	22000	**21800**	93	**21800**	93	0	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 6010B
MS/MSD QUALITY CONTROL
Page 2 of 3

Date Analyzed: 10-8,9,14,16&17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-027-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Magnesium	200000	**241000**	96	**242000**	97	0	
Manganese	1100	**1190**	90	**1200**	90	0	
Nickel	1100	**963**	88	**976**	89	1	
Potassium	22000	**23800**	97	**23600**	96	1	
Silver	1100	**1020**	93	**1020**	93	0	
Sodium	22000	**38800**	90	**39200**	92	1	
Vanadium	1100	**1010**	91	**1010**	92	0	
Zinc	2200	**1920**	87	**1930**	88	0	

Date of Report: October 20, 2003
Samples Submitted: October 3, 2003
Laboratory Reference: 0310-027
Project: 923-1000.002.R272

DISSOLVED METALS
EPA 7470A
MS/MSD QUALITY CONTROL
Page 3 of 3

Date Extracted: 10-17-03
Date Analyzed: 10-17-03

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-089-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	5.0	**5.26**	105	**5.22**	104	1	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 22, 2003

Doug Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 923-1000.002.R272
Laboratory Reference No. 0310-027

Dear Doug:

Enclosed are the analytical results and associated quality control data for samples submitted on October 3, 2003.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Landsberg Metals
data that had
to be subed
to ART
TN

Analytical Resources, Incorporated
Analytical Chemists and Consultants

20 October 2003

David Baumeister
OnSite Environmental, Inc.
14648 NE 95th
Redmond, WA 98052

RE: Client Project: 923-1000.002.R272, Landsburg
ARI Job No. FY02

Dear David:

Please find enclosed the original Chain-of-Custody (COC) record and the final results for the sample from the project referenced above. Analytical Resources, Inc. accepted one water sample in good condition on October 14, 2003. The sample was received intact and there were no discrepancies in the paperwork.

The sample was analyzed for dissolved metals as requested.

No analytical complications were noted.

A copy of these reports will remain on file at ARI. Should you have any questions, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark Harris
Project Manager
206/695-6210
mark@arilabs.com

Enclosures

cc: file FY02

MDH/ej

F402

10.2

CHAIN OF CUSTODY RECORD

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

Laboratory Reference #: 0310-027

Subcontract Laboratory: ~~Severn Trent Laboratories, Inc.~~ ANALYTICAL RESOURCES, INC

Phone #: 1 (253) 922 - 2310

Date/Time: 10/14/03

Contact Person: —

Project Manager: David Baumeister

Project Number: 923-1000.002.R272

Project Name: landsburg

OSE #	Sample ID	Date Sampled	Matrix	# Jars	Analysis Requested	Comments/Special Instructions
1	PORTAL SEEP 100303	10/3/03	W	1	Dissolved As(7060), Pb(7421), Se(7740) & Tl(7841)	

Relinquished by:	date: 10/14/03	Received by:	date: 10/14/03
Company:	time: —	Company:	time:
Relinquished by:	date:	Received by:	date:
Company:	time:	Company:	time:
Relinquished by:	date:	Received by:	date:
Company:	time:	Company:	time:

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: FY02MB
LIMS ID: 03-13951
Matrix: Water
Data Release Authorized:
Reported: 10/20/03

QC Report No: FY02-OnSite Environmental Inc.
Project: landsburg
923-1000.002.R272
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	10/16/03	7060A	10/16/03	7440-38-2	Arsenic	0.001	0.001	U
7000A	10/16/03	7421	10/17/03	7439-92-1	Lead	0.001	0.001	U
7000A	10/16/03	7740	10/17/03	7782-49-2	Selenium	0.002	0.002	U
7000A	10/16/03	7841	10/16/03	7440-28-0	Thallium	0.001	0.001	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PORTAL SEEP 100303
SAMPLE

Lab Sample ID: FY02A
LIMS ID: 03-13951
Matrix: Water
Data Release Authorized:
Reported: 10/20/03

QC Report No: FY02-OnSite Environmental Inc.
Project: landsburg
923-1000.002.R272
Date Sampled: 10/03/03
Date Received: 10/14/03

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	10/16/03	7060A	10/16/03	**7440-38-2**	**Arsenic**	0.001	**0.001**	
7000A	10/16/03	7421	10/17/03	7439-92-1	Lead	0.001	0.001	U
7000A	10/16/03	7740	10/17/03	7782-49-2	Selenium	0.002	0.002	U
7000A	10/16/03	7841	10/16/03	7440-28-0	Thallium	0.001	0.001	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: LAB CONTROL

Lab Sample ID: FY02LCS
LIMS ID: 03-13951
Matrix: Water
Data Release Authorized:
Reported: 10/20/03

QC Report No: FY02-OnSite Environmental Inc.
Project: landsburg
923-1000.002.R272
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	0.020	0.020	100%	
Lead	7421	0.021	0.020	105%	
Selenium	7740	0.020	0.020	100%	
Thallium	7841	0.020	0.020	100%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

Chain of Custody Record

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT STL

Client: GOLDER Assoc. Inc.	Project Manager: Douglas Morell	Date: Oct. 13, 03	Chain of Custody Number: 01824
Address: 18300 NE Union Hill Rd.	Telephone Number (Area Code)/Fax Number: 425 883-0777	Lab Number: 116871	Page 1 of 1
City: Redmond / State: WA / Zip Code: 98052	Site Contact	Lab Contact	
Project Name and Location (State): LANDSBURG Mine #923-1000	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	★	Bicarb/Carbonate	Chloride	Cyanide	Fluoride	Hardness	N+N	Sulfate	Alkalinity	TDS	Metals *	VOCs	SVOC	pest	PCB	DX	GX
1 LMW-02031010	10-10-03	ON FILE		X									X																
2 -03031009	10-09-03			X									X																
3 -04031013	10-13-03			X									X																
4 -05031009	10-09-03			X									X																
5 -06031010	10-10-03			X									X																
6 -07031010	10-10-03			X									X																
7 -09031009	10-09-03			X									X																
8 TRIP BLANK	10-8-03			X									X																

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Cooler: ☒ Yes ☐ No Cooler Temp:	Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months	(A fee may be assessed if samples are retained longer than 1 month)		
Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☒ 15 Days ☐ Other	QC Requirements (Specify)				
1. Relinquished By: [signature]	Date: 10/13/03	Time: 6:00p	1. Received By: K Hosley	Date: 10/13/03	Time: 6:20p
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: ★ See Analyte List Re: Katie Downie ; Please Note Sample Date for Hold Time Sensitive analysis.

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Laboratory Number: 10-027

Company:	Golder
Project Number:	923-1000.002.R272
Project Name:	Landsburg
Project Manager:	Doug Morell
Sampled by:	T. Norton

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (7 working days)
☐ _____ (other)

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID HAPDUPS (130)	NWTPH-Gx/BTEX (130)	NWTPH-Dx	Volatiles by 8260B + TIC	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8) pH (150.1)	TCLP Metals Spec method	HEM by 1664 Sulfate	VPH Nitrate+Nitrite	EPH Cyanide	23 metals by 6000-7000 series	Nitrate Nitrite	Cl, F, Silica (300.0)	Conductivity TDS (160.1)	% Moisture TURBIDITY (180.1)
1	Portal Seep 100303	10/03/03	1045	water	16	✓			✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	Signature	Company	Date	Time
Relinquished by	[signature]	Golder	10/3/03	1350
Received by	Kelley Weil	OnSite Env.	10/3/03	13:50
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

See Attached Table 3-2
Parameters of Intrest
to insure all analytes are
analyzed VOCs no/list
identified as TIC as
agreed – see D Baumister

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: October 13, 2003

TO: David Baumeister
OnSite Environmental, Inc.
14648 N. E. 95th St.
Redmond, WA 98052

PROJECT:

REPORT NUMBER: 116649

TOTAL NUMBER OF PAGES: 10

Enclosed are the test results for one sample received at STL Seattle on October 6, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Stan Palmquist
Project Manager

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
116649-1	Portal Seep 100303	10-03-03 *	Liquid

* - Sampling time not specified for this sample

STL Seattle

Client Name	OnSite Environmental, Inc.
Project Name	
Date Received	10-06-03

General Chemistry Parameters

	Client Sample ID		Portal Seep 100303		
	Lab ID		116649-01		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Bicarbonate (as CaCO3)	SM 2320B	10-09-03	mg/L	450	NC
Carbonate (as CaCO3)	SM 2320B	10-09-03	mg/L	0	NC
Conductivity	EPA 120.1	10-09-03	umhos/cm	750	10
Cyanide	EPA 335.3	09-30-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-08-03	mg/L	460	10
Turbidity	EPA 180.1	10-08-03	NTU	11.4	2.0

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 116614-01
QC Batch Number: 1191-63

Method Blank

Parameter	Result (mg/L)	PQL
Cyanide	ND	0.05

Duplicate

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD (%)	Flag
Cyanide	0.14	0.14	0.0	

Matrix Spike

Parameter	Sample Result (mg/L)	Matrix Spike Result (mg/L)	Spike Amount (mg/L)	Recovery (%)	Flag
Cyanide	0.14	0.23	0.10	90	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 116578-1
QC Batch Number: 1061-63

Method Blank

Parameter	Result (umhos/cm)	PQL
Conductivity	ND	10

Duplicate

Parameter	Sample Result (umhos/cm)	Duplicate Result (umhos/cm)	RPD (%)	Flag
Conductivity	127	128	0.8	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 116622-5
QC Batch Number: 1187-42

Method Blank

Parameter	Result (mg/L)	PQL
Total Dissolved Solids	ND	10

Duplicate

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD (%)	Flag
Total Dissolved Solids	172	174	1.16	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 116731-1
QC Batch Number: 1194-29

Method Blank

Parameter	Result (NTU)	PQL
Turbidity	ND	2.0

Duplicate

Parameter	Sample Result (NTU)	Duplicate Result (NTU)	RPD (%)	Flag
Turbidity	28.9	30.6	5.7	

STL Seattle

Client Name	OnSite Environmental, Inc.
Client ID:	PORTAL SEEP 100303
Lab ID:	116649-01
Date Received:	10/6/2003
Date Prepared:	10/7/2003
Date Analyzed:	10/7/2003
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte		Result (mg/L)	PQL	MRL	Flags
Fluoride	ND		0.06	0.03	
Chloride		1.43	0.3	0.15	
Sulfate		1.78	0.3	0.15	
Nitrate\Nitrite	ND		6.1	0.3	D

STL Seattle

Lab ID:	Method Blank - 1974
Date Received:	-
Date Prepared:	10/7/2003
Date Analyzed:	10/7/2003
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte		Result (mg/L)	PQL	MRL	Flags
Fluoride	ND		0.06	0.03	
Chloride	ND		0.3	0.15	
Sulfate	ND		0.3	0.15	
Nitrate\Nitrite	ND		0.61	0.03	

STL Seattle

Matrix Spike Report

Client Sample ID:	BOI-1
Lab ID:	116680-01
Date Prepared:	10/7/2003
Date Analyzed:	10/7/2003
QC Batch ID:	1974

Anions by USEPA Method 300A

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Fluoride	0.023	8	7.87	98	
Chloride	1.7	40	41.8	100	
Sulfate	2.4	40	42.4	100	
Nitrate\Nitrite	0.24	6	6.03	96	

STL Seattle

Duplicate Report

Client Sample ID:	BOI-1
Lab ID:	116680-01
Date Prepared:	10/7/2003
Date Analyzed:	10/7/2003
QC Batch ID:	1974

Anions by USEPA Method 300A

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Fluoride	0.023	0.12	-140.0	x4a
Chloride	1.7	1.7	0.0	
Sulfate	2.4	2.5	-4.1	
Nitrate\Nitrite	0.24	0.25	-4.1	

STL Seattle

Client Name	OnSite Environmental, Inc.
Client ID:	PORTAL SEEP 100303
Lab ID:	116649-01
Date Received:	10/6/03
Date Prepared:	10/7/03
Date Analyzed:	10/7/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Silica	25.9	0.05	

STL Seattle

Lab ID:	Method Blank - TP096
Date Received:	-
Date Prepared:	10/7/03
Date Analyzed:	10/7/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Silica	ND	0.05	

STL Seattle

Matrix Spike Report

Client Sample ID:	ANN03MW-18-MW14-M01-RS
Lab ID:	116605-05
Date Prepared:	10/7/03
Date Analyzed:	10/7/03
QC Batch ID:	TP096

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Silica	11	42.8	56.3	105	

STL Seattle

Duplicate Report

Client Sample ID:	ANN03MW-18-MW14-M01-RS
Lab ID:	116605-05
Date Prepared:	10/7/03
Date Analyzed:	10/7/03
QC Batch ID:	TP096

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Silica	11	11	0.0	

CHAIN OF CUSTODY RECORD

116649

Page 1 of 1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

Laboratory Reference #: 10-027

Subcontract Laboratory: Severn Trent Laboratories, Inc.

Phone #: 1 (253) 922 - 2310

Project Manager: David Baumeister

Date/Time: _____

Project Number: _____

Contact Person: _____

Project Name: _____

OSE #	Sample ID	Date Sampled	Matrix	# Jars	Analysis Requested	Comments/Special Instructions
-01	Portal Seep 100303	10/3/03	W	A	Specific Cond. (120.1)	
				B	CARBONate/BICARBonate. (310.1)	
				C	Sulfate	
				D	Nitrate + Nitrite	
				E	cyanide	
				I	Chloride / fluoride	
				F	Silica (6010)	
				G	TDS (160.1)	
				H	TURBIDITY (180.1)	

Relinquished by:	Kelley Wilf	date: 10/6/03	Received by:	C Leach	date: 10/6/03
Company:	OnSite Env.	time: 10:40	Company:	STL	time: 1041
Relinquished by:	C Leach	date: 10/6/03	Received by:	K Hess	date: 10/6/03
Company:	STL	time: 1330	Company:	STL	time: 1330
Relinquished by:		date:	Received by:		date:
Company:		time:	Company:		time:

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: January 8, 2004

TO: Douglas Morell
Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA 98052-3333

PROJECT: Landsburg Mine #923-1000

REPORT NUMBER: 116871 - Revised

TOTAL NUMBER OF PAGES: _____

Enclosed are the test results for eight samples received at STL Seattle on October 14, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
116871-1	LMW-02031010	10-10-03 *	Liquid
116871-2	LMW-03031009	10-09-03 *	Liquid
116871-3	LMW-04031013	10-13-03 *	Liquid
116871-4	LMW-05031009	10-09-03 *	Liquid
116871-5	LMW-06031010	10-10-03 *	Liquid
116871-6	LMW-07031010	10-10-03 *	Liquid
116871-7	LMW-09031009	10-09-03 *	Liquid
116871-8	Trip Blank	10-08-09 *	Liquid

* - Sampling time not specified for this sample

STL Seattle

Client Name	Golder Associates
Project Name	Landsburg Mine #923-1000
Date Received	10-14-03

General Chemistry Parameters

Client Sample ID			LMW-02031010		
Lab ID			116871-01		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	650	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	630	10

Client Sample ID			LMW-03031009		
Lab ID			116871-02		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	170	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	160	10

Client Sample ID			LMW-04031013		
Lab ID			116871-03		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	640	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	650	10

Client Sample ID			LMW-05031009		
Lab ID			116871-04		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	440	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	420	10

STL Seattle

Client Sample ID			LMW-06031010		
Lab ID			116871-05		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	130	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	150	10

Client Sample ID			LMW-07031010		
Lab ID			116871-06		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	380	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	370	10

Client Sample ID			LMW-09031009		
Lab ID			116871-07		
Parameter	**Method**	**Date Analyzed**	**Units**	**Result**	**PQL**
Alkalinity (as CaCO3)	EPA 310.1	10-27-03	mg/L	450	5
Cyanide	EPA 335.3	10-23-03	mg/L	ND	0.05
Total Dissolved Solids	EPA 160.1	10-14-03	mg/L	430	10

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	86.7		80	120
Fluorobenzene	92		80	120
Toluene-D8	96.4		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	97.9		80	120

Analyte		Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND		1	0.5	
Chloromethane	ND		2	1	
Vinyl chloride	ND		1	0.5	
Bromomethane	ND		2.5	1.25	
Chloroethane	ND		1	0.5	
Trichlorofluoromethane	ND		1	0.5	
1,1-Dichloroethene	ND		1	0.5	
Carbon disulfide	ND		1	0.5	
Acetone	ND		5	2.5	
Methylene chloride	ND		2	1	
trans-1,2-Dichloroethene	ND		1	0.5	
1,1-Dichloroethane	ND		1	0.5	
2,2-Dichloropropane	ND		1	0.5	
2-Butanone	ND		5	2.5	
cis-1,2-Dichloroethene	ND		1	0.5	
Bromochloromethane	ND		1	0.5	
Chloroform	ND		1	0.5	
1,1,1-Trichloroethane	ND		1	0.5	
Carbon Tetrachloride	ND		1	0.5	
1,1-Dichloropropene	ND		1	0.5	
Benzene	ND		1	0.5	
1,2-Dichloroethane	ND		1	0.5	
Trichloroethene	ND		1	0.5	
1,2-Dichloropropane	ND		1	0.5	
Dibromomethane	ND		1	0.5	
Bromodichloromethane	ND		1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-01 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	85.7		80	120
Fluorobenzene	90.7		80	120
Toluene-D8	97.5		80	120
Ethylbenzene-d10	111		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	97.5		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-02 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	87.8		80	120
Fluorobenzene	92.7		80	120
Toluene-D8	97.2		80	120
Ethylbenzene-d10	112		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	92.9		80	120

Analyte		Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND		1	0.5	
Chloromethane	ND		2	1	
Vinyl chloride	ND		1	0.5	
Bromomethane	ND		2.5	1.25	
Chloroethane	ND		1	0.5	
Trichlorofluoromethane	ND		1	0.5	
1,1-Dichloroethene	ND		1	0.5	
Carbon disulfide	ND		1	0.5	
Acetone	ND		5	2.5	
Methylene chloride	ND		2	1	
trans-1,2-Dichloroethene	ND		1	0.5	
1,1-Dichloroethane	ND		1	0.5	
2,2-Dichloropropane	ND		1	0.5	
2-Butanone	ND		5	2.5	
cis-1,2-Dichloroethene	ND		1	0.5	
Bromochloromethane	ND		1	0.5	
Chloroform	ND		1	0.5	
1,1,1-Trichloroethane	ND		1	0.5	
Carbon Tetrachloride	ND		1	0.5	
1,1-Dichloropropene	ND		1	0.5	
Benzene	ND		1	0.5	
1,2-Dichloroethane	ND		1	0.5	
Trichloroethene	ND		1	0.5	
1,2-Dichloropropane	ND		1	0.5	
Dibromomethane	ND		1	0.5	
Bromodichloromethane	ND		1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-03 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	88.1		80	120
Fluorobenzene	93		80	120
Toluene-D8	96.4		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	101		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-04 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	87.5		80	120
Fluorobenzene	91.8		80	120
Toluene-D8	97.5		80	120
Ethylbenzene-d10	111		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	96.9		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-05 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	87.4		80	120
Fluorobenzene	93		80	120
Toluene-D8	96.6		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	95.2		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-06 continued...

Analyte	Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND	1	0.5
4-Methyl-2-pentanone	ND	5	2.5
Toluene	ND	1	0.5
trans-1,3-Dichloropropene	ND	1	0.5
1,1,2-Trichloroethane	ND	1	0.5
Tetrachloroethene	ND	1	0.5
1,3-Dichloropropane	ND	1	0.5
2-Hexanone	ND	5	2.5
Dibromochloromethane	ND	1	0.5
1,2-Dibromoethane	ND	1	0.5
Chlorobenzene	ND	1	0.5
Ethylbenzene	ND	1	0.5
1,1,1,2-Tetrachloroethane	ND	1	0.5
m,p-Xylene	ND	2	1
o-Xylene	ND	1	0.5
Styrene	ND	1	0.5
Bromoform	ND	1	0.5
Isopropylbenzene	ND	1	0.5
Bromobenzene	ND	1	0.5
n-Propylbenzene	ND	1	0.5
1,1,2,2-Tetrachloroethane	ND	1	0.5
1,2,3-Trichloropropane	ND	1	0.5
2-Chlorotoluene	ND	1	0.5
1,3,5-Trimethylbenzene	ND	1	0.5
4-Chlorotoluene	ND	1	0.5
t-Butylbenzene	ND	1	0.5
1,2,4-Trimethylbenzene	ND	1	0.5
sec-Butylbenzene	ND	1	0.5
1,3-Dichlorobenzene	ND	1	0.5
4-Isopropyltoluene	ND	1	0.5
1,4-Dichlorobenzene	ND	1	0.5
n-Butylbenzene	ND	1	0.5
1,2-Dichlorobenzene	ND	1	0.5
1,2-Dibromo-3-chloropropane	ND	1	0.5
1,2,4-Trichlorobenzene	ND	1	0.5
Hexachlorobutadiene	ND	1	0.5
Naphthalene	ND	2	1
1,2,3-Trichlorobenzene	ND	1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	85.1		80	120
Fluorobenzene	91		80	120
Toluene-D8	97.1		80	120
Ethylbenzene-d10	111		80	120
Bromofluorobenzene	103		80	120
Trifluorotoluene	101		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-07 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	TRIP BLANK
Lab ID:	116871-08
Date Received:	10/14/2003
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	86.7		80	120
Fluorobenzene	93.5		80	120
Toluene-D8	97.6		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	95.4		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for 116871-08 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	81.7		10	112
Phenol - d5	45.8		10	85
Nitrobenzene - d5	125		41	155
2 - Fluorobiphenyl	126		34	148
2,4,6 - Tribromophenol	123		29	159
p - Terphenyl - d14	123		33	172

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.958	0.479	
bis(2-Chloroethyl)ether	ND		0.958	0.479	
2-Chlorophenol	ND		0.958	0.479	
1,3-Dichlorobenzene	ND		0.958	0.479	
1,4-Dichlorobenzene	ND		0.958	0.479	
Benzyl Alcohol	ND		0.958	0.479	
1,2-Dichlorobenzene	ND		0.958	0.479	
2-Methylphenol	ND		0.958	0.479	
bis(2-Chloroisopropyl)ether	ND		0.958	0.479	
3-&4-Methylphenol	ND		1.92	0.958	
N-nitroso-di-n-propylamine	ND		0.958	0.479	
Hexachloroethane	ND		0.958	0.479	
Nitrobenzene	ND		0.958	0.479	
Isophorone	ND		0.958	0.479	
2-Nitrophenol	ND		0.958	0.479	
2,4-Dimethylphenol	ND		4.79	2.39	
Benzoic Acid	ND		4.79	2.39	
bis(2-Chloroethoxy)methane	ND		0.958	0.479	
2,4-Dichlorophenol	ND		0.958	0.479	
1,2,4-Trichlorobenzene	ND		0.958	0.479	
Naphthalene	ND		0.287	0.144	
4-Chloroaniline	ND		1.44	0.718	
Hexachlorobutadiene	ND		0.958	0.479	
4-Chloro-3-methylphenol	ND		0.958	0.479	
2-Methylnaphthalene	ND		0.239	0.12	
Hexachlorocyclopentadiene	ND		4.79	2.39	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-01 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.958	0.479
2,4,5-Trichlorophenol	ND		0.958	0.479
2-Chloronaphthalene	ND		0.239	0.12
2-Nitroaniline	ND		0.958	0.479
Dimethylphthalate	ND		0.958	0.479
Acenaphthylene	ND		0.239	0.12
2,6-Dinitrotoluene	ND		0.958	0.479
3-Nitroaniline	ND		0.958	0.479
Acenaphthene	ND		0.239	0.12
2,4-Dinitrophenol	ND		4.79	2.39
4-Nitrophenol	ND		4.79	2.39
Dibenzofuran	ND		0.958	0.479
2,4-Dinitrotoluene	ND		0.958	0.479
Diethylphthalate	ND		0.958	0.479
4-Chlorophenylphenylether	ND		0.958	0.479
Fluorene	ND		0.239	0.12
4-Nitroaniline	ND		0.958	0.479
4,6-Dinitro-2-methylphenol	ND		4.79	2.39
N-Nitrosodiphenylamine	ND		0.958	0.479
4-Bromophenylphenylether	ND		0.958	0.479
Hexachlorobenzene	ND		0.958	0.479
Pentachlorophenol	ND		3.11	1.56
Phenanthrene	ND		0.239	0.12
Anthracene	ND		0.239	0.12
Di-n-butylphthalate	ND		0.958	0.479
Fluoranthene	ND		0.239	0.12
Pyrene	ND		0.239	0.12
Butylbenzylphthalate	ND		1.44	0.718
3,3'-Dichlorobenzidine	ND		4.79	2.39
Benzo(a)anthracene	ND		0.239	0.12
Chrysene	ND		0.239	0.12
bis(2-Ethylhexyl)phthalate	ND		7.18	3.59
Di-n-octylphthalate	ND		0.958	0.479
Benzofluoranthenes	ND		0.479	0.239
Benzo(a)pyrene	ND		0.239	0.12
Indeno(1,2,3-cd)pyrene	ND		0.239	0.12
Dibenz(a,h)anthracene	ND		0.239	0.12
Benzo(g,h,i)perylene	ND		0.239	0.12
Carbazole	ND		0.958	0.479
Aniline	ND		1.44	0.718

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	79.8		10	112
Phenol - d5	43.8		10	85
Nitrobenzene - d5	134		41	155
2 - Fluorobiphenyl	133		34	148
2,4,6 - Tribromophenol	138		29	159
p - Terphenyl - d14	134		33	172

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.95	0.475	
bis(2-Chloroethyl)ether	ND		0.95	0.475	
2-Chlorophenol	ND		0.95	0.475	
1,3-Dichlorobenzene	ND		0.95	0.475	
1,4-Dichlorobenzene	ND		0.95	0.475	
Benzyl Alcohol	ND		0.95	0.475	
1,2-Dichlorobenzene	ND		0.95	0.475	
2-Methylphenol	ND		0.95	0.475	
bis(2-Chloroisopropyl)ether	ND		0.95	0.475	
3-&4-Methylphenol	ND		1.9	0.95	
N-nitroso-di-n-propylamine	ND		0.95	0.475	
Hexachloroethane	ND		0.95	0.475	
Nitrobenzene	ND		0.95	0.475	
Isophorone	ND		0.95	0.475	
2-Nitrophenol	ND		0.95	0.475	
2,4-Dimethylphenol	ND		4.75	2.37	
Benzoic Acid	ND		4.75	2.37	
bis(2-Chloroethoxy)methane	ND		0.95	0.475	
2,4-Dichlorophenol	ND		0.95	0.475	
1,2,4-Trichlorobenzene	ND		0.95	0.475	
Naphthalene	ND		0.285	0.142	
4-Chloroaniline	ND		1.42	0.712	
Hexachlorobutadiene	ND		0.95	0.475	
4-Chloro-3-methylphenol	ND		0.95	0.475	
2-Methylnaphthalene	ND		0.237	0.119	
Hexachlorocyclopentadiene	ND		4.75	2.37	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-02 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.95	0.475
2,4,5-Trichlorophenol	ND		0.95	0.475
2-Chloronaphthalene	ND		0.237	0.119
2-Nitroaniline	ND		0.95	0.475
Dimethylphthalate	ND		0.95	0.475
Acenaphthylene	ND		0.237	0.119
2,6-Dinitrotoluene	ND		0.95	0.475
3-Nitroaniline	ND		0.95	0.475
Acenaphthene	ND		0.237	0.119
2,4-Dinitrophenol	ND		4.75	2.37
4-Nitrophenol	ND		4.75	2.37
Dibenzofuran	ND		0.95	0.475
2,4-Dinitrotoluene	ND		0.95	0.475
Diethylphthalate	ND		0.95	0.475
4-Chlorophenylphenylether	ND		0.95	0.475
Fluorene	ND		0.237	0.119
4-Nitroaniline	ND		0.95	0.475
4,6-Dinitro-2-methylphenol	ND		4.75	2.37
N-Nitrosodiphenylamine	ND		0.95	0.475
4-Bromophenylphenylether	ND		0.95	0.475
Hexachlorobenzene	ND		0.95	0.475
Pentachlorophenol	ND		3.09	1.54
Phenanthrene	ND		0.237	0.119
Anthracene	ND		0.237	0.119
Di-n-butylphthalate	ND		0.95	0.475
Fluoranthene	ND		0.237	0.119
Pyrene	ND		0.237	0.119
Butylbenzylphthalate	ND		1.42	0.712
3,3'-Dichlorobenzidine	ND		4.75	2.37
Benzo(a)anthracene	ND		0.237	0.119
Chrysene	ND		0.237	0.119
bis(2-Ethylhexyl)phthalate	ND		7.12	3.56
Di-n-octylphthalate	ND		0.95	0.475
Benzofluoranthenes	ND		0.475	0.237
Benzo(a)pyrene	ND		0.237	0.119
Indeno(1,2,3-cd)pyrene	ND		0.237	0.119
Dibenz(a,h)anthracene	ND		0.237	0.119
Benzo(g,h,i)perylene	ND		0.237	0.119
Carbazole	ND		0.95	0.475
Aniline	ND		1.42	0.712

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	84.7		10	112
Phenol - d5	53.2		10	85
Nitrobenzene - d5	119		41	155
2 - Fluorobiphenyl	129		34	148
2,4,6 - Tribromophenol	127		29	159
p - Terphenyl - d14	116		33	172

		Result			
Analyte		**(ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.95	0.475	
bis(2-Chloroethyl)ether	ND		0.95	0.475	
2-Chlorophenol	ND		0.95	0.475	
1,3-Dichlorobenzene	ND		0.95	0.475	
1,4-Dichlorobenzene	ND		0.95	0.475	
Benzyl Alcohol	ND		0.95	0.475	
1,2-Dichlorobenzene	ND		0.95	0.475	
2-Methylphenol	ND		0.95	0.475	
bis(2-Chloroisopropyl)ether	ND		0.95	0.475	
3-&4-Methylphenol	ND		1.9	0.95	
N-nitroso-di-n-propylamine	ND		0.95	0.475	
Hexachloroethane	ND		0.95	0.475	
Nitrobenzene	ND		0.95	0.475	
Isophorone	ND		0.95	0.475	
2-Nitrophenol	ND		0.95	0.475	
2,4-Dimethylphenol	ND		4.75	2.37	
Benzoic Acid	ND		4.75	2.37	
bis(2-Chloroethoxy)methane	ND		0.95	0.475	
2,4-Dichlorophenol	ND		0.95	0.475	
1,2,4-Trichlorobenzene	ND		0.95	0.475	
Naphthalene	ND		0.285	0.142	
4-Chloroaniline	ND		1.42	0.712	
Hexachlorobutadiene	ND		0.95	0.475	
4-Chloro-3-methylphenol	ND		0.95	0.475	
2-Methylnaphthalene	ND		0.237	0.119	
Hexachlorocyclopentadiene	ND		4.75	2.37	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-03 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.95	0.475
2,4,5-Trichlorophenol	ND		0.95	0.475
2-Chloronaphthalene	ND		0.237	0.119
2-Nitroaniline	ND		0.95	0.475
Dimethylphthalate	ND		0.95	0.475
Acenaphthylene	ND		0.237	0.119
2,6-Dinitrotoluene	ND		0.95	0.475
3-Nitroaniline	ND		0.95	0.475
Acenaphthene	ND		0.237	0.119
2,4-Dinitrophenol	ND		4.75	2.37
4-Nitrophenol	ND		4.75	2.37
Dibenzofuran	ND		0.95	0.475
2,4-Dinitrotoluene	ND		0.95	0.475
Diethylphthalate	ND		0.95	0.475
4-Chlorophenylphenylether	ND		0.95	0.475
Fluorene	ND		0.237	0.119
4-Nitroaniline	ND		0.95	0.475
4,6-Dinitro-2-methylphenol	ND		4.75	2.37
N-Nitrosodiphenylamine	ND		0.95	0.475
4-Bromophenylphenylether	ND		0.95	0.475
Hexachlorobenzene	ND		0.95	0.475
Pentachlorophenol	ND		3.09	1.54
Phenanthrene	ND		0.237	0.119
Anthracene	ND		0.237	0.119
Di-n-butylphthalate	ND		0.95	0.475
Fluoranthene	ND		0.237	0.119
Pyrene	ND		0.237	0.119
Butylbenzylphthalate	ND		1.42	0.712
3,3'-Dichlorobenzidine	ND		4.75	2.37
Benzo(a)anthracene	ND		0.237	0.119
Chrysene	ND		0.237	0.119
bis(2-Ethylhexyl)phthalate	ND		7.12	3.56
Di-n-octylphthalate	ND		0.95	0.475
Benzofluoranthenes	ND		0.475	0.237
Benzo(a)pyrene	ND		0.237	0.119
Indeno(1,2,3-cd)pyrene	ND		0.237	0.119
Dibenz(a,h)anthracene	ND		0.237	0.119
Benzo(g,h,i)perylene	ND		0.237	0.119
Carbazole	ND		0.95	0.475
Aniline	ND		1.42	0.712

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	87.6		10	112
Phenol - d5	44.6		10	85
Nitrobenzene - d5	120		41	155
2 - Fluorobiphenyl	137		34	148
2,4,6 - Tribromophenol	125		29	159
p - Terphenyl - d14	126		33	172

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.953	0.477	
bis(2-Chloroethyl)ether	ND		0.953	0.477	
2-Chlorophenol	ND		0.953	0.477	
1,3-Dichlorobenzene	ND		0.953	0.477	
1,4-Dichlorobenzene	ND		0.953	0.477	
Benzyl Alcohol	ND		0.953	0.477	
1,2-Dichlorobenzene	ND		0.953	0.477	
2-Methylphenol	ND		0.953	0.477	
bis(2-Chloroisopropyl)ether	ND		0.953	0.477	
3-&4-Methylphenol	ND		1.91	0.953	
N-nitroso-di-n-propylamine	ND		0.953	0.477	
Hexachloroethane	ND		0.953	0.477	
Nitrobenzene	ND		0.953	0.477	
Isophorone	ND		0.953	0.477	
2-Nitrophenol	ND		0.953	0.477	
2,4-Dimethylphenol	ND		4.77	2.38	
Benzoic Acid	ND		4.77	2.38	
bis(2-Chloroethoxy)methane	ND		0.953	0.477	
2,4-Dichlorophenol	ND		0.953	0.477	
1,2,4-Trichlorobenzene	ND		0.953	0.477	
Naphthalene	ND		0.286	0.143	
4-Chloroaniline	ND		1.43	0.715	
Hexachlorobutadiene	ND		0.953	0.477	
4-Chloro-3-methylphenol	ND		0.953	0.477	
2-Methylnaphthalene	ND		0.238	0.119	
Hexachlorocyclopentadiene	ND		4.77	2.38	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-04 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.953	0.477
2,4,5-Trichlorophenol	ND		0.953	0.477
2-Chloronaphthalene	ND		0.238	0.119
2-Nitroaniline	ND		0.953	0.477
Dimethylphthalate	ND		0.953	0.477
Acenaphthylene	ND		0.238	0.119
2,6-Dinitrotoluene	ND		0.953	0.477
3-Nitroaniline	ND		0.953	0.477
Acenaphthene	ND		0.238	0.119
2,4-Dinitrophenol	ND		4.77	2.38
4-Nitrophenol	ND		4.77	2.38
Dibenzofuran	ND		0.953	0.477
2,4-Dinitrotoluene	ND		0.953	0.477
Diethylphthalate	ND		0.953	0.477
4-Chlorophenylphenylether	ND		0.953	0.477
Fluorene	ND		0.238	0.119
4-Nitroaniline	ND		0.953	0.477
4,6-Dinitro-2-methylphenol	ND		4.77	2.38
N-Nitrosodiphenylamine	ND		0.953	0.477
4-Bromophenylphenylether	ND		0.953	0.477
Hexachlorobenzene	ND		0.953	0.477
Pentachlorophenol	ND		3.1	1.55
Phenanthrene	ND		0.238	0.119
Anthracene	ND		0.238	0.119
Di-n-butylphthalate	ND		0.953	0.477
Fluoranthene	ND		0.238	0.119
Pyrene	ND		0.238	0.119
Butylbenzylphthalate	ND		1.43	0.715
3,3'-Dichlorobenzidine	ND		4.77	2.38
Benzo(a)anthracene	ND		0.238	0.119
Chrysene	ND		0.238	0.119
bis(2-Ethylhexyl)phthalate	ND		7.15	3.57
Di-n-octylphthalate	ND		0.953	0.477
Benzofluoranthenes	ND		0.477	0.238
Benzo(b)fluoranthene	ND		0.238	0.119
Benzo(k)fluoranthene	ND		0.238	0.119
Benzo(a)pyrene	ND		0.238	0.119
Indeno(1,2,3-cd)pyrene	ND		0.238	0.119
Dibenz(a,h)anthracene	ND		0.238	0.119
Benzo(g,h,i)perylene	ND		0.238	0.119
Carbazole	ND		0.953	0.477
Aniline	ND		1.43	0.715

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	77.8		10	112
Phenol - d5	45.2		10	85
Nitrobenzene - d5	133		41	155
2 - Fluorobiphenyl	135		34	148
2,4,6 - Tribromophenol	120		29	159
p - Terphenyl - d14	125		33	172

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.962	0.481	
bis(2-Chloroethyl)ether	ND		0.962	0.481	
2-Chlorophenol	ND		0.962	0.481	
1,3-Dichlorobenzene	ND		0.962	0.481	
1,4-Dichlorobenzene	ND		0.962	0.481	
Benzyl Alcohol	ND		0.962	0.481	
1,2-Dichlorobenzene	ND		0.962	0.481	
2-Methylphenol	ND		0.962	0.481	
bis(2-Chloroisopropyl)ether	ND		0.962	0.481	
3-&4-Methylphenol	ND		1.92	0.962	
N-nitroso-di-n-propylamine	ND		0.962	0.481	
Hexachloroethane	ND		0.962	0.481	
Nitrobenzene	ND		0.962	0.481	
Isophorone	ND		0.962	0.481	
2-Nitrophenol	ND		0.962	0.481	
2,4-Dimethylphenol	ND		4.81	2.4	
Benzoic Acid	ND		4.81	2.4	
bis(2-Chloroethoxy)methane	ND		0.962	0.481	
2,4-Dichlorophenol	ND		0.962	0.481	
1,2,4-Trichlorobenzene	ND		0.962	0.481	
Naphthalene	ND		0.288	0.144	
4-Chloroaniline	ND		1.44	0.721	
Hexachlorobutadiene	ND		0.962	0.481	
4-Chloro-3-methylphenol	ND		0.962	0.481	
2-Methylnaphthalene	ND		0.24	0.12	
Hexachlorocyclopentadiene	ND		4.81	2.4	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-05 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.962	0.481
2,4,5-Trichlorophenol	ND		0.962	0.481
2-Chloronaphthalene	ND		0.24	0.12
2-Nitroaniline	ND		0.962	0.481
Dimethylphthalate	ND		0.962	0.481
Acenaphthylene	ND		0.24	0.12
2,6-Dinitrotoluene	ND		0.962	0.481
3-Nitroaniline	ND		0.962	0.481
Acenaphthene	ND		0.24	0.12
2,4-Dinitrophenol	ND		4.81	2.4
4-Nitrophenol	ND		4.81	2.4
Dibenzofuran	ND		0.962	0.481
2,4-Dinitrotoluene	ND		0.962	0.481
Diethylphthalate	ND		0.962	0.481
4-Chlorophenylphenylether	ND		0.962	0.481
Fluorene	ND		0.24	0.12
4-Nitroaniline	ND		0.962	0.481
4,6-Dinitro-2-methylphenol	ND		4.81	2.4
N-Nitrosodiphenylamine	ND		0.962	0.481
4-Bromophenylphenylether	ND		0.962	0.481
Hexachlorobenzene	ND		0.962	0.481
Pentachlorophenol	ND		3.13	1.56
Phenanthrene	ND		0.24	0.12
Anthracene	ND		0.24	0.12
Di-n-butylphthalate	ND		0.962	0.481
Fluoranthene	ND		0.24	0.12
Pyrene	ND		0.24	0.12
Butylbenzylphthalate	ND		1.44	0.721
3,3'-Dichlorobenzidine	ND		4.81	2.4
Benzo(a)anthracene	ND		0.24	0.12
Chrysene	ND		0.24	0.12
bis(2-Ethylhexyl)phthalate	ND		7.21	3.61
Di-n-octylphthalate	ND		0.962	0.481
Benzofluoranthenes	ND		0.481	0.24
Benzo(a)pyrene	ND		0.24	0.12
Indeno(1,2,3-cd)pyrene	ND		0.24	0.12
Dibenz(a,h)anthracene	ND		0.24	0.12
Benzo(g,h,i)perylene	ND		0.24	0.12
Carbazole	ND		0.962	0.481
Aniline	ND		1.44	0.721

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	90.9		10	112
Phenol - d5	49		10	85
Nitrobenzene - d5	137		41	155
2 - Fluorobiphenyl	128		34	148
2,4,6 - Tribromophenol	118		29	159
p - Terphenyl - d14	118		33	172

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND		0.962	0.481	
bis(2-Chloroethyl)ether	ND		0.962	0.481	
2-Chlorophenol	ND		0.962	0.481	
1,3-Dichlorobenzene	ND		0.962	0.481	
1,4-Dichlorobenzene	ND		0.962	0.481	
Benzyl Alcohol	ND		0.962	0.481	
1,2-Dichlorobenzene	ND		0.962	0.481	
2-Methylphenol	ND		0.962	0.481	
bis(2-Chloroisopropyl)ether	ND		0.962	0.481	
3-&4-Methylphenol	ND		1.92	0.962	
N-nitroso-di-n-propylamine	ND		0.962	0.481	
Hexachloroethane	ND		0.962	0.481	
Nitrobenzene	ND		0.962	0.481	
Isophorone	ND		0.962	0.481	
2-Nitrophenol	ND		0.962	0.481	
2,4-Dimethylphenol	ND		4.81	2.41	
Benzoic Acid	ND		4.81	2.41	
bis(2-Chloroethoxy)methane	ND		0.962	0.481	
2,4-Dichlorophenol	ND		0.962	0.481	
1,2,4-Trichlorobenzene	ND		0.962	0.481	
Naphthalene	ND		0.289	0.144	
4-Chloroaniline	ND		1.44	0.722	
Hexachlorobutadiene	ND		0.962	0.481	
4-Chloro-3-methylphenol	ND		0.962	0.481	
2-Methylnaphthalene	ND		0.241	0.12	
Hexachlorocyclopentadiene	ND		4.81	2.41	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-06 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.962	0.481
2,4,5-Trichlorophenol	ND		0.962	0.481
2-Chloronaphthalene	ND		0.241	0.12
2-Nitroaniline	ND		0.962	0.481
Dimethylphthalate	ND		0.962	0.481
Acenaphthylene	ND		0.241	0.12
2,6-Dinitrotoluene	ND		0.962	0.481
3-Nitroaniline	ND		0.962	0.481
Acenaphthene	ND		0.241	0.12
2,4-Dinitrophenol	ND		4.81	2.41
4-Nitrophenol	ND		4.81	2.41
Dibenzofuran	ND		0.962	0.481
2,4-Dinitrotoluene	ND		0.962	0.481
Diethylphthalate	ND		0.962	0.481
4-Chlorophenylphenylether	ND		0.962	0.481
Fluorene	ND		0.241	0.12
4-Nitroaniline	ND		0.962	0.481
4,6-Dinitro-2-methylphenol	ND		4.81	2.41
N-Nitrosodiphenylamine	ND		0.962	0.481
4-Bromophenylphenylether	ND		0.962	0.481
Hexachlorobenzene	ND		0.962	0.481
Pentachlorophenol	ND		3.13	1.56
Phenanthrene	ND		0.241	0.12
Anthracene	ND		0.241	0.12
Di-n-butylphthalate	ND		0.962	0.481
Fluoranthene	ND		0.241	0.12
Pyrene	ND		0.241	0.12
Butylbenzylphthalate	ND		1.44	0.722
3,3'-Dichlorobenzidine	ND		4.81	2.41
Benzo(a)anthracene	ND		0.241	0.12
Chrysene	ND		0.241	0.12
bis(2-Ethylhexyl)phthalate	ND		7.22	3.61
Di-n-octylphthalate	ND		0.962	0.481
Benzofluoranthenes	ND		0.481	0.241
Benzo(a)pyrene	ND		0.241	0.12
Indeno(1,2,3-cd)pyrene	ND		0.241	0.12
Dibenz(a,h)anthracene	ND		0.241	0.12
Benzo(g,h,i)perylene	ND		0.241	0.12
Carbazole	ND		0.962	0.481
Aniline	ND		1.44	0.722

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	75.6		10	112
Phenol - d5	42.5		10	85
Nitrobenzene - d5	132		41	155
2 - Fluorobiphenyl	133		34	148
2,4,6 - Tribromophenol	127		29	159
p - Terphenyl - d14	127		33	172

Analyte	**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Phenol	ND	0.951	0.476	
bis(2-Chloroethyl)ether	ND	0.951	0.476	
2-Chlorophenol	ND	0.951	0.476	
1,3-Dichlorobenzene	ND	0.951	0.476	
1,4-Dichlorobenzene	ND	0.951	0.476	
Benzyl Alcohol	ND	0.951	0.476	
1,2-Dichlorobenzene	ND	0.951	0.476	
2-Methylphenol	ND	0.951	0.476	
bis(2-Chloroisopropyl)ether	ND	0.951	0.476	
3-&4-Methylphenol	ND	1.9	0.951	
N-nitroso-di-n-propylamine	ND	0.951	0.476	
Hexachloroethane	ND	0.951	0.476	
Nitrobenzene	ND	0.951	0.476	
Isophorone	ND	0.951	0.476	
2-Nitrophenol	ND	0.951	0.476	
2,4-Dimethylphenol	ND	4.76	2.38	
Benzoic Acid	ND	4.76	2.38	
bis(2-Chloroethoxy)methane	ND	0.951	0.476	
2,4-Dichlorophenol	ND	0.951	0.476	
1,2,4-Trichlorobenzene	ND	0.951	0.476	
Naphthalene	ND	0.285	0.143	
4-Chloroaniline	ND	1.43	0.714	
Hexachlorobutadiene	ND	0.951	0.476	
4-Chloro-3-methylphenol	ND	0.951	0.476	
2-Methylnaphthalene	ND	0.238	0.119	
Hexachlorocyclopentadiene	ND	4.76	2.38	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for 116871-07 continued...

Analyte		Result (ug/L)	PQL	MRL
2,4,6-Trichlorophenol	ND		0.951	0.476
2,4,5-Trichlorophenol	ND		0.951	0.476
2-Chloronaphthalene	ND		0.238	0.119
2-Nitroaniline	ND		0.951	0.476
Dimethylphthalate	ND		0.951	0.476
Acenaphthylene	ND		0.238	0.119
2,6-Dinitrotoluene	ND		0.951	0.476
3-Nitroaniline	ND		0.951	0.476
Acenaphthene	ND		0.238	0.119
2,4-Dinitrophenol	ND		4.76	2.38
4-Nitrophenol	ND		4.76	2.38
Dibenzofuran	ND		0.951	0.476
2,4-Dinitrotoluene	ND		0.951	0.476
Diethylphthalate	ND		0.951	0.476
4-Chlorophenylphenylether	ND		0.951	0.476
Fluorene	ND		0.238	0.119
4-Nitroaniline	ND		0.951	0.476
4,6-Dinitro-2-methylphenol	ND		4.76	2.38
N-Nitrosodiphenylamine	ND		0.951	0.476
4-Bromophenylphenylether	ND		0.951	0.476
Hexachlorobenzene	ND		0.951	0.476
Pentachlorophenol	ND		3.09	1.55
Phenanthrene	ND		0.238	0.119
Anthracene	ND		0.238	0.119
Di-n-butylphthalate	ND		0.951	0.476
Fluoranthene	ND		0.238	0.119
Pyrene	ND		0.238	0.119
Butylbenzylphthalate	ND		1.43	0.714
3,3'-Dichlorobenzidine	ND		4.76	2.38
Benzo(a)anthracene	ND		0.238	0.119
Chrysene	ND		0.238	0.119
bis(2-Ethylhexyl)phthalate	ND		7.14	3.57
Di-n-octylphthalate	ND		0.951	0.476
Benzofluoranthenes	ND		0.476	0.238
Benzo(a)pyrene	ND		0.238	0.119
Indeno(1,2,3-cd)pyrene	ND		0.238	0.119
Dibenz(a,h)anthracene	ND		0.238	0.119
Benzo(g,h,i)perylene	ND		0.238	0.119
Carbazole	ND		0.951	0.476
Aniline	ND		1.43	0.714

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		52	130
Decachlorobiphenyl	95.9		54	146

Analyte	**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND	0.00951	
alpha-BHC	ND	0.00951	
beta-BHC	ND	0.00951	
delta-BHC	ND	0.00951	
gamma-BHC (Lindane)	ND	0.00951	
Chlordane (technical)	ND	0.0951	
4,4'-DDD	ND	0.019	
4,4'-DDE	ND	0.019	
4,4'-DDT	ND	0.019	
Dieldrin	ND	0.019	
Endosulfan I	ND	0.00951	
Endosulfan II	ND	0.019	
Endosulfan sulfate	ND	0.019	
Endrin	ND	0.019	
Endrin aldehyde	ND	0.019	
Heptachlor	ND	0.00951	
Heptachlor epoxide	ND	0.00951	
Methoxychlor	ND	0.0951	
Toxaphene	ND	0.951	
alpha-Chlordane	ND	0.00951	
gamma-Chlordane	ND	0.00951	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	105		52	130
Decachlorobiphenyl	111		54	146

Analyte	**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND	0.00958	
alpha-BHC	ND	0.00958	
beta-BHC	ND	0.00958	
delta-BHC	ND	0.00958	
gamma-BHC (Lindane)	ND	0.00958	
Chlordane (technical)	ND	0.0958	
4,4'-DDD	ND	0.0192	
4,4'-DDE	ND	0.0192	
4,4'-DDT	ND	0.0192	
Dieldrin	ND	0.0192	
Endosulfan I	ND	0.00958	
Endosulfan II	ND	0.0192	
Endosulfan sulfate	ND	0.0192	
Endrin	ND	0.0192	
Endrin aldehyde	ND	0.0192	
Heptachlor	ND	0.00958	
Heptachlor epoxide	ND	0.00958	
Methoxychlor	ND	0.0958	
Toxaphene	ND	0.958	
alpha-Chlordane	ND	0.00958	
gamma-Chlordane	ND	0.00958	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		52	130
Decachlorobiphenyl	97.1		54	146

Analyte	**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND	0.00956	
alpha-BHC	ND	0.00956	
beta-BHC	ND	0.00956	
delta-BHC	ND	0.00956	
gamma-BHC (Lindane)	ND	0.00956	
Chlordane (technical)	ND	0.0956	
4,4'-DDD	ND	0.0191	
4,4'-DDE	ND	0.0191	
4,4'-DDT	ND	0.0191	
Dieldrin	ND	0.0191	
Endosulfan I	ND	0.00956	
Endosulfan II	ND	0.0191	
Endosulfan sulfate	ND	0.0191	
Endrin	ND	0.0191	
Endrin aldehyde	ND	0.0191	
Heptachlor	ND	0.00956	
Heptachlor epoxide	ND	0.00956	
Methoxychlor	ND	0.0956	
Toxaphene	ND	0.956	
alpha-Chlordane	ND	0.00956	
gamma-Chlordane	ND	0.00956	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		52	130
Decachlorobiphenyl	111		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.00952	
alpha-BHC	ND		0.00952	
beta-BHC	ND		0.00952	
delta-BHC	ND		0.00952	
gamma-BHC (Lindane)	ND		0.00952	
Chlordane (technical)	ND		0.0952	
4,4'-DDD	ND		0.019	
4,4'-DDE	ND		0.019	
4,4'-DDT	ND		0.019	
Dieldrin	ND		0.019	
Endosulfan I	ND		0.00952	
Endosulfan II	ND		0.019	
Endosulfan sulfate	ND		0.019	
Endrin	ND		0.019	
Endrin aldehyde	ND		0.019	
Heptachlor	ND		0.00952	
Heptachlor epoxide	ND		0.00952	
Methoxychlor	ND		0.0952	
Toxaphene	ND		0.952	
alpha-Chlordane	ND		0.00952	
gamma-Chlordane	ND		0.00952	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		52	130
Decachlorobiphenyl	109		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.00959	
alpha-BHC	ND		0.00959	
beta-BHC	ND		0.00959	
delta-BHC	ND		0.00959	
gamma-BHC (Lindane)	ND		0.00959	
Chlordane (technical)	ND		0.0959	
4,4'-DDD	ND		0.0192	
4,4'-DDE	ND		0.0192	
4,4'-DDT	ND		0.0192	
Dieldrin	ND		0.0192	
Endosulfan I	ND		0.00959	
Endosulfan II	ND		0.0192	
Endosulfan sulfate	ND		0.0192	
Endrin	ND		0.0192	
Endrin aldehyde	ND		0.0192	
Heptachlor	ND		0.00959	
Heptachlor epoxide	ND		0.00959	
Methoxychlor	ND		0.0959	
Toxaphene	ND		0.959	
alpha-Chlordane	ND		0.00959	
gamma-Chlordane	ND		0.00959	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	96.2		52	130
Decachlorobiphenyl	99.7		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.00959	
alpha-BHC	ND		0.00959	
beta-BHC	ND		0.00959	
delta-BHC	ND		0.00959	
gamma-BHC (Lindane)	ND		0.00959	
Chlordane (technical)	ND		0.0959	
4,4'-DDD	ND		0.0192	
4,4'-DDE	ND		0.0192	
4,4'-DDT	ND		0.0192	
Dieldrin	ND		0.0192	
Endosulfan I	ND		0.00959	
Endosulfan II	ND		0.0192	
Endosulfan sulfate	ND		0.0192	
Endrin	ND		0.0192	
Endrin aldehyde	ND		0.0192	
Heptachlor	ND		0.00959	
Heptachlor epoxide	ND		0.00959	
Methoxychlor	ND		0.0959	
Toxaphene	ND		0.959	
alpha-Chlordane	ND		0.00959	
gamma-Chlordane	ND		0.00959	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	105		52	130
Decachlorobiphenyl	110		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.0095	
alpha-BHC	ND		0.0095	
4,4'-DDD	ND		0.019	
4,4'-DDE	ND		0.019	
4,4'-DDT	ND		0.019	
alpha-Chlordane	ND		0.0095	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	105		52	130
Decachlorobiphenyl	110		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.0095	
alpha-BHC	ND		0.0095	
beta-BHC	ND		0.0095	
delta-BHC	ND		0.0095	
gamma-BHC (Lindane)	ND		0.0095	
Chlordane (technical)	ND		0.095	
4,4'-DDD	ND		0.019	
4,4'-DDE	ND		0.019	
4,4'-DDT	ND		0.019	
Dieldrin	ND		0.019	
Endosulfan I	ND		0.0095	
Endosulfan II	ND		0.019	
Endosulfan sulfate	ND		0.019	
Endrin	ND		0.019	
Endrin aldehyde	ND		0.019	
Heptachlor	ND		0.0095	
Heptachlor epoxide	ND		0.0095	
Methoxychlor	ND		0.095	
Toxaphene	ND		0.95	
alpha-Chlordane	ND		0.0095	
gamma-Chlordane	ND		0.0095	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/18/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	57.8		55	111
Decachlorobiphenyl	57.8	X9	60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0951	0.0475	
Aroclor 1221	ND		0.19	0.0951	
Aroclor 1232	ND		0.0951	0.0475	
Aroclor 1242	ND		0.0951	0.0475	
Aroclor 1248	ND		0.0951	0.0475	
Aroclor 1254	ND		0.0951	0.0475	
Aroclor 1260	ND		0.0951	0.0475	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/17/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	72.9		55	111
Decachlorobiphenyl	80.8		60	133

Analyte	**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND	0.0948	0.0474	
Aroclor 1221	ND	0.19	0.0948	
Aroclor 1232	ND	0.0948	0.0474	
Aroclor 1242	ND	0.0948	0.0474	
Aroclor 1248	ND	0.0948	0.0474	
Aroclor 1254	ND	0.0948	0.0474	
Aroclor 1260	ND	0.0948	0.0474	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/18/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	63.6		55	111
Decachlorobiphenyl	57.4	X9	60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0951	0.0475	
Aroclor 1221	ND		0.19	0.0951	
Aroclor 1232	ND		0.0951	0.0475	
Aroclor 1242	ND		0.0951	0.0475	
Aroclor 1248	ND		0.0951	0.0475	
Aroclor 1254	ND		0.0951	0.0475	
Aroclor 1260	ND		0.0951	0.0475	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/18/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	57.5		55	111
Decachlorobiphenyl	55.8	X9	60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0958	0.0479	
Aroclor 1221	ND		0.192	0.0958	
Aroclor 1232	ND		0.0958	0.0479	
Aroclor 1242	ND		0.0958	0.0479	
Aroclor 1248	ND		0.0958	0.0479	
Aroclor 1254	ND		0.0958	0.0479	
Aroclor 1260	ND		0.0958	0.0479	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/17/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	68.4		55	111
Decachlorobiphenyl	72.1		60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0961	0.048	
Aroclor 1221	ND		0.192	0.0961	
Aroclor 1232	ND		0.0961	0.048	
Aroclor 1242	ND		0.0961	0.048	
Aroclor 1248	ND		0.0961	0.048	
Aroclor 1254	ND		0.0961	0.048	
Aroclor 1260	ND		0.0961	0.048	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/17/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	68.9		55	111
Decachlorobiphenyl	73.6		60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0962	0.0481	
Aroclor 1221	ND		0.192	0.0962	
Aroclor 1232	ND		0.0962	0.0481	
Aroclor 1242	ND		0.0962	0.0481	
Aroclor 1248	ND		0.0962	0.0481	
Aroclor 1254	ND		0.0962	0.0481	
Aroclor 1260	ND		0.0962	0.0481	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/18/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	58		55	111
Decachlorobiphenyl	65		60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.0957	0.0478	
Aroclor 1221	ND		0.191	0.0957	
Aroclor 1232	ND		0.0957	0.0478	
Aroclor 1242	ND		0.0957	0.0478	
Aroclor 1248	ND		0.0957	0.0478	
Aroclor 1254	ND		0.0957	0.0478	
Aroclor 1260	ND		0.0957	0.0478	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	92.6		50	150
Bromofluorobenzene	93.3		50	150
Pentafluorobenzene	78.9		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	97.2		50	150
Bromofluorobenzene	96.2		50	150
Pentafluorobenzene	81.9		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	97.9		50	150
Bromofluorobenzene	97.3		50	150
Pentafluorobenzene	82.6		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	96.6		50	150
Bromofluorobenzene	95.9		50	150
Pentafluorobenzene	81.6		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	98.9		50	150
Bromofluorobenzene	97.7		50	150
Pentafluorobenzene	83.1		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	97.9		50	150
Bromofluorobenzene	95.9		50	150
Pentafluorobenzene	82.4		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/18/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	98.9		50	150
Bromofluorobenzene	98.1		50	150
Pentafluorobenzene	83.1		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	TRIP BLANK
Lab ID:	116871-08
Date Received:	10/14/2003
Date Prepared:	10/17/2003
Date Analyzed:	10/17/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	99.8		50	150
Bromofluorobenzene	99.1		50	150
Pentafluorobenzene	83.8		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	79.6		50	150

Analyte		**Result (mg/L)**	**PQL**	**MRL**	**Flags**
#2 Diesel	ND		0.239	0.119	
Motor Oil	ND		0.477	0.239	

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STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
o-terphenyl	88.8		50	150

Analyte		Result (mg/L)	PQL	MRL	Flags
#2 Diesel	ND		0.237	0.119	
Motor Oil	ND		0.474	0.237	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	84.5		50	150

Analyte		**Result (mg/L)**	**PQL**	**MRL**	**Flags**
#2 Diesel	ND		0.237	0.118	
Motor Oil	ND		0.474	0.237	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	High
o-terphenyl	88.7		50	150

Analyte		Result (mg/L)	PQL	MRL	Flags
#2 Diesel	ND		0.238	0.119	
Motor Oil	ND		0.477	0.238	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	88.5		50	150

Analyte		**Result (mg/L)**	**PQL**	**MRL**	**Flags**
#2 Diesel	ND		0.239	0.119	
Motor Oil	ND		0.477	0.239	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
o-terphenyl	87.6		50	150

Analyte		Result (mg/L)	PQL	MRL	Flags
#2 Diesel	ND		0.239	0.12	
Motor Oil	ND		0.478	0.239	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/16/2003
Date Analyzed:	10/21/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	95.1		50	150

Analyte		**Result (mg/L)**	**PQL**	**MRL**	**Flags**
#2 Diesel	ND		0.239	0.119	
Motor Oil	ND		0.477	0.239	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	126	1	
Iron	0.477	0.1	
Magnesium	75.9	1	
Potassium	4.04	1	
Silicon	10.1	0.05	
Sodium	26.6	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.297	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	ND	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.245	0.001	
Nickel	0.00322	0.001	
Selenium	0.00147	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00323	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/15/03
Date Analyzed:	10/15/03
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	38.1	1	
Iron	ND	0.1	
Magnesium	15.8	1	
Potassium	1.79	1	
Silicon	10.9	0.05	
Sodium	10.3	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.0742	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	ND	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.0637	0.001	
Nickel	0.00159	0.001	
Selenium	ND	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00254	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	128	1	
Iron	0.657	0.1	
Magnesium	75.6	1	
Potassium	4.15	1	
Silicon	10.2	0.05	
Sodium	29.7	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.371	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	ND	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.214	0.001	
Nickel	0.00357	0.001	
Selenium	0.00137	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00379	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	89.3	1	
Iron	0.858	0.1	
Magnesium	50.2	1	
Potassium	2.77	1	
Silicon	10.5	0.05	
Sodium	19.9	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	0.00137	0.001	
Antimony	ND	0.001	
Barium	0.258	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	0.00157	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.217	0.001	
Nickel	0.00284	0.001	
Selenium	0.00115	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00329	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	30.8	1	
Iron	2.3	0.1	
Magnesium	16	1	
Potassium	ND	1	
Silicon	11.6	0.05	
Sodium	8.92	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.108	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	ND	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.0337	0.001	
Nickel	ND	0.001	
Selenium	ND	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00274	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	58.6	1	
Iron	0.961	0.1	
Magnesium	27.8	1	
Potassium	3.71	1	
Silicon	11.5	0.05	
Sodium	58.6	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.508	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	0.00115	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.144	0.001	
Nickel	0.00218	0.001	
Selenium	ND	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.00442	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	87	1	
Iron	0.839	0.1	
Magnesium	48.9	1	
Potassium	2.69	1	
Silicon	10.4	0.05	
Sodium	19.8	1	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/03
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	5

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Antimony	ND	0.001	
Barium	0.26	0.001	
Beryllium	ND	0.001	
Cadmium	ND	0.001	
Chromium	0.00139	0.001	
Cobalt	ND	0.001	
Copper	ND	0.001	
Lead	ND	0.001	
Manganese	0.21	0.001	
Nickel	0.0024	0.001	
Selenium	0.00133	0.001	
Silver	ND	0.001	
Thallium	ND	0.001	
Vanadium	ND	0.001	
Zinc	0.0031	0.001	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/2003
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte		Result (mg/L)	PQL	MRL	Flags
Fluoride	ND		0.06	0.03	
Chloride		2.29	0.6	0.3	D2
Sulfate		0.58	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-02031010
Lab ID:	116871-01
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Fluoride	0.036	0.06	0.03	J
Chloride	1.34	0.3	0.15	
Sulfate	10.1	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-03031009
Lab ID:	116871-02
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte		Result (mg/L)	PQL	MRL	Flags
Fluoride	ND		0.06	0.03	
Chloride		2.1	0.6	0.3	D2
Sulfate		7.61	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-04031013
Lab ID:	116871-03
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Fluoride	ND	0.06	0.03	
Chloride	1.29	0.6	0.3	D2
Sulfate	3.09	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-05031009
Lab ID:	116871-04
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Fluoride	0.085	0.06	0.03	
Chloride	0.845	0.3	0.15	
Sulfate	29.2	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-06031010
Lab ID:	116871-05
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Fluoride	0.078	0.06	0.03	
Chloride	1.27	0.6	0.3	D2
Sulfate	2.44	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-07031010
Lab ID:	116871-06
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Fluoride	ND	0.06	0.03	
Chloride	1.28	0.6	0.3	D2
Sulfate	3.08	0.3	0.15	

STL Seattle

Client Name	Golder Associates
Client ID:	LMW-09031009
Lab ID:	116871-07
Date Received:	10/14/03
Date Prepared:	10/20/03
Date Analyzed:	10/21/03
% Solids	-
Dilution Factor	10

Anions by USEPA Method 300A

Analyte	Result (mg/L)	PQL	MRL	Flags
Nitrate\Nitrite	ND	0.61	0.3	

STL Seattle

Lab ID:	Method Blank - 1980
Date Received:	-
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
% Solids	-
Dilution Factor	1

Anions by USEPA Method 300A

Analyte		Result (mg/L)	PQL	MRL	Flags
Fluoride	ND		0.06	0.03	
Chloride	ND		0.3	0.15	
Sulfate	ND		0.3	0.15	
Nitrate\Nitrite	ND		0.061	0.03	

STL Seattle

Blank Spike Report

Lab ID:	1980
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
QC Batch ID:	1980

Anions by USEPA Method 300A

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.	Flag
Fluoride	0	2.5	2.36	94.4	
Chloride	0	5	4.5	90	
Sulfate	0	5	4.65	93.1	
Nitrate\Nitrite	0	2.66	2.51	94.2	

STL Seattle

Matrix Spike Report

Client Sample ID:	1-RA-DW
Lab ID:	116960-41
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
QC Batch ID:	1980

Anions by USEPA Method 300A

Compound Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Fluoride	0.31	8	7.42	88.9	X7
Chloride	5.1	40	45.4	101	
Sulfate	11	40	51.8	102	
Nitrate\Nitrite	2.3	6	8.24	99.6	

STL Seattle

Duplicate Report

Client Sample ID:	1-RA-DW
Lab ID:	116960-41
Date Prepared:	10/20/03
Date Analyzed:	10/20/03
QC Batch ID:	1980

Anions by USEPA Method 300A

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Fluoride	0.309	0.318	-2.9	
Chloride	5.13	5.2	-1.4	
Sulfate	10.9	10.8	0.9	
Nitrate\Nitrite	2.26	2.29	-1.3	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 116729-3
QC Batch Number: 1187-53

Method Blank

Parameter	Result (mg/L)	PQL
Total Dissolved Solids	ND	10

Duplicate

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD (%)	Flag
Total Dissolved Solids	86.2	77.5	10.6	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: LMW-02031010
Lab ID: 116871-01
QC Batch Number: 1191-71

Method Blank

Parameter	Result (mg/L)	PQL
Cyanide	ND	0.05

Duplicate

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD (%)	Flag
Cyanide	ND	ND	NC	

Matrix Spike

Parameter	Sample Result (mg/L)	Matrix Spike Result (mg/L)	Spike Amount (mg/L)	Recovery (%)	Flag
Cyanide	ND	0.06	0.10	60	X7

Blank Spike

Parameter	Blank Spike Result (mg/L)	Spike Amount (mg/L)	Recovery (%)	Flag
Cyanide	0.103	0.10	103	

STL Seattle

QUALITY CONTROL REPORT

Client Sample ID: Batch QC
Lab ID: 117018-1
QC Batch Number: 1165-43

Method Blank

Parameter	Result (mg/L)	PQL
Alkalinity (as CaCO3)	ND	3

Duplicate

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD (%)	Flag
Alkalinity (as CaCO3)	543	527	3.0	

STL Seattle

Lab ID:	Method Blank - VOA497
Date Received:	-
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Volatile Organics by USEPA Method 5030/8260B

SMC / Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	85.6		80	120
Fluorobenzene	91.9		80	120
Toluene-D8	96.7		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	99.6		80	120

Analyte	Result (ug/L)	PQL	MRL	Flags
Dichlorodifluoromethane	ND	1	0.5	
Chloromethane	ND	2	1	
Vinyl chloride	ND	1	0.5	
Bromomethane	ND	2.5	1.25	
Chloroethane	ND	1	0.5	
Trichlorofluoromethane	ND	1	0.5	
1,1-Dichloroethene	ND	1	0.5	
Carbon disulfide	ND	1	0.5	
Acetone	ND	5	2.5	
Methylene chloride	ND	2	1	
trans-1,2-Dichloroethene	ND	1	0.5	
1,1-Dichloroethane	ND	1	0.5	
2,2-Dichloropropane	ND	1	0.5	
2-Butanone	ND	5	2.5	
cis-1,2-Dichloroethene	ND	1	0.5	
Bromochloromethane	ND	1	0.5	
Chloroform	ND	1	0.5	
1,1,1-Trichloroethane	ND	1	0.5	
Carbon Tetrachloride	ND	1	0.5	
1,1-Dichloropropene	ND	1	0.5	
Benzene	ND	1	0.5	
1,2-Dichloroethane	ND	1	0.5	
Trichloroethene	ND	1	0.5	
1,2-Dichloropropane	ND	1	0.5	
Dibromomethane	ND	1	0.5	
Bromodichloromethane	ND	1	0.5	

STL Seattle

Volatile Organics by USEPA Method 5030/8260B data for VOA497 continued...

Analyte		Result (ug/L)	PQL	MRL
cis-1,3-Dichloropropene	ND		1	0.5
4-Methyl-2-pentanone	ND		5	2.5
Toluene	ND		1	0.5
trans-1,3-Dichloropropene	ND		1	0.5
1,1,2-Trichloroethane	ND		1	0.5
Tetrachloroethene	ND		1	0.5
1,3-Dichloropropane	ND		1	0.5
2-Hexanone	ND		5	2.5
Dibromochloromethane	ND		1	0.5
1,2-Dibromoethane	ND		1	0.5
Chlorobenzene	ND		1	0.5
Ethylbenzene	ND		1	0.5
1,1,1,2-Tetrachloroethane	ND		1	0.5
m,p-Xylene	ND		2	1
o-Xylene	ND		1	0.5
Styrene	ND		1	0.5
Bromoform	ND		1	0.5
Isopropylbenzene	ND		1	0.5
Bromobenzene	ND		1	0.5
n-Propylbenzene	ND		1	0.5
1,1,2,2-Tetrachloroethane	ND		1	0.5
1,2,3-Trichloropropane	ND		1	0.5
2-Chlorotoluene	ND		1	0.5
1,3,5-Trimethylbenzene	ND		1	0.5
4-Chlorotoluene	ND		1	0.5
t-Butylbenzene	ND		1	0.5
1,2,4-Trimethylbenzene	ND		1	0.5
sec-Butylbenzene	ND		1	0.5
1,3-Dichlorobenzene	ND		1	0.5
4-Isopropyltoluene	ND		1	0.5
1,4-Dichlorobenzene	ND		1	0.5
n-Butylbenzene	ND		1	0.5
1,2-Dichlorobenzene	ND		1	0.5
1,2-Dibromo-3-chloropropane	ND		1	0.5
1,2,4-Trichlorobenzene	ND		1	0.5
Hexachlorobutadiene	ND		1	0.5
Naphthalene	ND		2	1
1,2,3-Trichlorobenzene	ND		1	0.5

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	VOA497
Date Prepared:	10/20/2003
Date Analyzed:	10/20/2003
QC Batch ID:	VOA497

Volatile Organics by USEPA Method 5030/8260B

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
1,1-Dichloroethene	0	5	4.6	91.9	4.36	87.1	-5.4	
Benzene	0	5	4.79	95.8	4.51	90.2	-6	
Trichloroethene	0	5	4.66	93.2	4.49	89.7	-3.8	
Toluene	0	5	4.71	94.2	4.47	89.4	-5.2	
Chlorobenzene	0	5	5.05	101	4.84	96.7	-4.4	

STL Seattle

Lab ID:	Method Blank - SW0737
Date Received:	-
Date Prepared:	10/15/2003
Date Analyzed:	10/16/2003
% Solids	-
Dilution Factor	0.5

Semivolatile Organics by USEPA Method 8270

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
2 - Fluorophenol	79.8		10	112
Phenol - d5	35.3		10	85
Nitrobenzene - d5	121		41	155
2 - Fluorobiphenyl	105		34	148
2,4,6 - Tribromophenol	106		29	159
p - Terphenyl - d14	110		33	172

Analyte	**Result (ug/L)**	**PQL**	**MRL**	**Flags**
2-Chlorophenol	ND	1	0.5	
1,3-Dichlorobenzene	ND	1	0.5	
1,4-Dichlorobenzene	ND	1	0.5	
1,2-Dichlorobenzene	ND	1	0.5	
2-Methylphenol	ND	1	0.5	
3-&4-Methylphenol	ND	2	1	
2-Nitrophenol	ND	1	0.5	
2,4-Dimethylphenol	ND	5	2.5	
2,4-Dichlorophenol	ND	1	0.5	
1,2,4-Trichlorobenzene	ND	1	0.5	
4-Chloroaniline	ND	1.5	0.75	
4-Chloro-3-methylphenol	ND	1	0.5	
2-Methylnaphthalene	ND	0.25	0.125	
2,4,6-Trichlorophenol	ND	1	0.5	
2,4,5-Trichlorophenol	ND	1	0.5	
2-Chloronaphthalene	ND	0.25	0.125	
2-Nitroaniline	ND	1	0.5	
Acenaphthylene	ND	0.25	0.125	
2,6-Dinitrotoluene	ND	1	0.5	
3-Nitroaniline	ND	1	0.5	
Acenaphthene	ND	0.25	0.125	
2,4-Dinitrophenol	ND	5	2.5	
4-Nitrophenol	ND	5	2.5	
2,4-Dinitrotoluene	ND	1	0.5	
4-Chlorophenylphenylether	ND	1	0.5	
4-Nitroaniline	ND	1	0.5	

STL Seattle

Semivolatile Organics by USEPA Method 8270 data for SW0737 continued...

Analyte		Result (ug/L)	PQL	MRL
4,6-Dinitro-2-methylphenol	ND		5	2.5
4-Bromophenylphenylether	ND		1	0.5
Anthracene	ND		0.25	0.125
3,3'-Dichlorobenzidine	ND		5	2.5
Aniline	ND		1.5	0.75

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	SW0737
Date Prepared:	10/15/2003
Date Analyzed:	10/16/2003
QC Batch ID:	SW0737

Semivolatile Organics by USEPA Method 8270

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
2-Chlorophenol	0	7.5	8.35	111	7.99	106	-4.6	
1,4-Dichlorobenzene	0	5	5.14	103	5.57	111	7.5	
1,2,4-Trichlorobenzene	0	5	4.68	93.7	4.72	94.5	0.85	
4-Chloro-3-methylphenol	0	7.5	9.68	129	8.44	113	-13	
Acenaphthene	0	5	5.13	103	5.56	111	7.5	
4-Nitrophenol	0	7.5	5.34	71.3	5.37	71.6	0.42	
2,4-Dinitrotoluene	0	5	4.57	91.5	5.02	100	8.9	

STL Seattle

Lab ID:	Method Blank - PW0208
Date Received:	-
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
% Solids	-
Dilution Factor	1

Organochlorine Pesticides by USEPA Methods 8081A

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	103		52	130
Decachlorobiphenyl	97		54	146

Analyte		**Result (ug/L)**	**PQL**	**Flags**
Aldrin	ND		0.01	
alpha-BHC	ND		0.01	
4,4'-DDD	ND		0.02	
4,4'-DDE	ND		0.02	
4,4'-DDT	ND		0.02	
alpha-Chlordane	ND		0.01	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PW0208
Date Prepared:	10/16/2003
Date Analyzed:	10/24/2003
QC Batch ID:	PW0208

Organochlorine Pesticides by USEPA Methods 8081A

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Aldrin	0	0.4	0.313	78.3	0.399	99.7	24	N
alpha-BHC	0	0.4	0.338	84.5	0.423	106	23	
4,4'-DDD	0	0.4	0.35	87.6	0.437	109	22	
4,4'-DDE	0	0.4	0.325	81.4	0.407	102	22	
4,4'-DDT	0	0.4	0.377	94.3	0.472	118	22	
alpha-Chlordane	0	0.4	0.317	79.2	0.399	99.8	23	

STL Seattle

Lab ID:	Method Blank - PBW0212
Date Received:	-
Date Prepared:	10/15/03
Date Analyzed:	10/17/03
% Solids	-
Dilution Factor	1

PCBs by USEPA Method 8082

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Tetrachloro-m-xylene	71.1		55	111
Decachlorobiphenyl	75.8		60	133

Analyte		**Result (ug/L)**	**PQL**	**MRL**	**Flags**
Aroclor 1016	ND		0.1	0.05	
Aroclor 1221	ND		0.2	0.1	
Aroclor 1232	ND		0.1	0.05	
Aroclor 1242	ND		0.1	0.05	
Aroclor 1248	ND		0.1	0.05	
Aroclor 1254	ND		0.1	0.05	
Aroclor 1260	ND		0.1	0.05	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	PBW0212
Date Prepared:	10/15/03
Date Analyzed:	10/17/03
QC Batch ID:	PBW0212

PCBs by USEPA Method 8082

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
Aroclor 1242	0	1	0.754	75.4	0.74	74	-1.9	
Aroclor 1260	0	1	0.863	86.3	0.869	86.9	0.69	

STL Seattle

Lab ID:	Method Blank - GB3601
Date Received:	-
Date Prepared:	10/17/2003
Date Analyzed:	10/17/2003
% Solids	-
Dilution Factor	1

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	91.4		50	150
Bromofluorobenzene	95.3		50	150
Pentafluorobenzene	78.7		50	150

Analyte	**Result (mg/L)**	**PQL**	**Flags**
Gasoline by NWTPH-G	ND	0.1	

00117

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	GB3601
Date Prepared:	10/17/2003
Date Analyzed:	10/17/2003
QC Batch ID:	GB3601

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.	BSD Result (mg/L)	BSD % Rec.	RPD	Flag
Gasoline by NWTPH-G	0	1.25	1.16	92.9	1.16	92.5	-0.43	

STL Seattle

Lab ID:	Method Blank - DW0514
Date Received:	-
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	81.9		50	150

Analyte		**Result (mg/L)**	**PQL**	**MRL**	**Flags**
#2 Diesel	ND		0.25	0.125	
Motor Oil	ND		0.5	0.25	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	DW0514
Date Prepared:	10/16/2003
Date Analyzed:	10/20/2003
QC Batch ID:	DW0514

Diesel and Motor Oil by NWTPH-Dx Modified

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.	BSD Result (mg/L)	BSD % Rec.	RPD	Flag
#2 Diesel	0	5	4.58	91.5	4.91	98.2	7.1	
Motor Oil	0	5	4.77	95.4	5.47	109	13	

STL Seattle

Lab ID:	Method Blank - TP132
Date Received:	-
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Aluminum	ND	0.1	
Calcium	ND	1	
Iron	ND	0.1	
Magnesium	ND	1	
Potassium	ND	1	
Silicon	ND	0.05	
Sodium	ND	1	

STL Seattle

Matrix Spike Report

Client Sample ID:	ANN03MP-51C-P01-M01
Lab ID:	116682-06
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
QC Batch ID:	TP132

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Aluminum	0.23	4	4.39	104	
Calcium	8.4	20	28.6	101	
Iron	8.1	22	29.9	99	
Magnesium	39	20	58.8	101	
Potassium	2.1	20	22.4	102	
Silicon	9.2	20	29.1	100	
Sodium	7.6	20	29.7	110	

STL Seattle

Duplicate Report

Client Sample ID:	ANN03MP-51C-P01-M01
Lab ID:	116682-06
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
QC Batch ID:	TP132

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Aluminum	0.23	0.23	0.0	
Calcium	8.4	8.3	1.2	
Iron	8.1	8	1.2	
Magnesium	39	39	0.0	
Potassium	2.1	2.2	-4.7	
Silicon	9.2	9.2	0.0	
Sodium	7.6	8.1	-6.4	

STL Seattle

Lab ID:	Method Blank - TP132
Date Received:	-
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.0002	
Antimony	ND	0.0002	
Barium	ND	0.0002	
Beryllium	ND	0.0002	
Cadmium	ND	0.0002	
Chromium	ND	0.0002	
Cobalt	ND	0.0002	
Copper	ND	0.0002	
Lead	ND	0.0002	
Manganese	ND	0.0002	
Nickel	ND	0.0002	
Selenium	ND	0.0002	
Silver	ND	0.0002	
Thallium	ND	0.0002	
Vanadium	ND	0.0002	
Zinc	ND	0.0002	

STL Seattle

Matrix Spike Report

Client Sample ID:	ANN03MP-51C-P01-M01
Lab ID:	116682-06
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
QC Batch ID:	TP132

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Arsenic	0.0018	4	3.85	96	
Antimony	0	3	3.14	105	
Barium	0.024	4	3.85	96	
Beryllium	0	0.1	0.101	101	
Cadmium	0	0.1	0.0972	97	
Chromium	0.003	0.4	0.395	98	
Cobalt	0.0035	1	0.962	96	
Copper	0.0023	0.5	0.483	96	
Lead	0.0011	1	1.02	102	
Manganese	0.26	1	1.23	97	
Nickel	0.028	1	0.976	95	
Selenium	0.0011	4	3.98	100	
Silver	0	0.6	0.579	97	
Thallium	0	4	3.78	95	
Vanadium	0	1	1.03	103	
Zinc	0.0064	1	0.978	97	

STL Seattle

Duplicate Report

Client Sample ID:	ANN03MP-51C-P01-M01
Lab ID:	116682-06
Date Prepared:	10/16/03
Date Analyzed:	10/16/03
QC Batch ID:	TP132

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Arsenic	0.0018	0	200.0	X4a
Antimony	0	0	NC	
Barium	0.024	0.024	0.0	
Beryllium	0	0	NC	
Cadmium	0	0	NC	
Chromium	0.003	0.0037	-21.0	X4a
Cobalt	0.0035	0.0035	0.0	
Copper	0.0023	0.0024	-4.3	
Lead	0.0011	0.0012	-8.7	
Manganese	0.26	0.26	0.0	
Nickel	0.028	0.029	-3.5	
Selenium	0.0011	0	200.0	X4a
Silver	0	0	NC	
Thallium	0	0	NC	
Vanadium	0	0	NC	
Zinc	0.0064	0.0072	-12.0	

STL Seattle

Lab ID:	Method Blank - ZT1461
Date Received:	-
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

STL Seattle

Matrix Spike Report

Client Sample ID:	ANN03MW-01-MW08-M01D
Lab ID:	116880-03
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
QC Batch ID:	ZT1461

Mercury by CVAA - USEPA Method 7470

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Mercury	0	0.002	0.00161	81	

STL Seattle

Duplicate Report

Client Sample ID:	ANN03MW-01-MW08-M01D
Lab ID:	116880-03
Date Prepared:	10/15/2003
Date Analyzed:	10/15/2003
QC Batch ID:	ZT1461

Mercury by CVAA - USEPA Method 7470

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Mercury	0	0	NC	

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

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www.stl-inc.com

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

MRL: Method Reporting Limit

N: See analytical narrative

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

Work Order 116871

Date 10/15/2003 11:13:16 AM

Contact, Company, and Address

Douglas Morell
Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA 98052-3333

SAS Contact

Katie Downie

Work Phone (425) 883-0777 x

Fax Number (425) 882-5498

Items Discussed

Tom Stapp called, please cancel the carbonate/bicarbonate analyses

Resolution

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Golder
Project Number: 923-1000.002.R272
Project Name: Landsburg
Project Manager: Doug Morell
Sampled by: T. Norton

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (7 working days)
☐ _____ (other)

Laboratory Number: 10-027

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX (Benzene/BTEX)	NWTPH-Dx	Volatiles by 8260B + TIC	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8) pH (150.1)	TCLP Metals Spec max (1312)	HEM by 1664 Sulfate	VOA Nitrate+Nitrite	EPA Cyanide	23 metals by 6000-7000 series	Nitrate Nitrite	Chloride Cl, Fl, Silica (300.0)	Conductivity TDS (160.1)	% Moisture Turbidity 180.1
1	Portal Seep 100303	10/03/03	1045	water	16				✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	Signature	Company	Date	Time
Relinquished by		Golder	10/3/03	1350
Received by		OnSite Env.	10/3/03	13:50
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
See Attached Table 3-2 Parameters of Intrest to insure all analytes are analyzed VOCs not to be identified as TIC as agreed – see D Bannister

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy